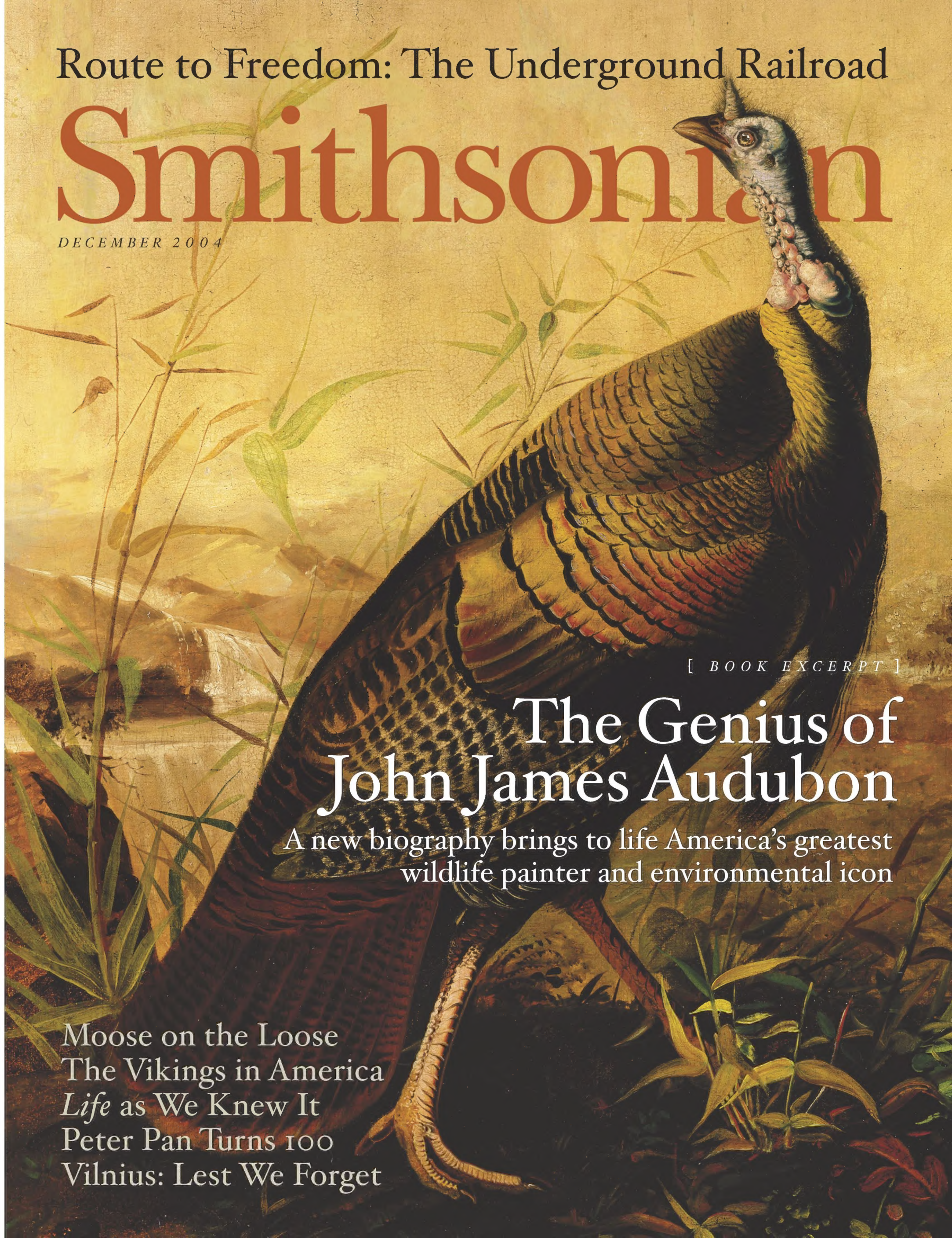
Route to Freedom: The Underground Railroad

Smithsonian

DECEMBER 2004



[BOOK EXCERPT]

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The FDA tested the products and found significant quality problems. The fake Ambien had too much medicine. The fake Lipitor and Viagra had too little medicine and had too many impurities.

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Sources: US Senate Drug Importation Hearings: Health, Education, Labor & Pensions Committee, May 20, 2004 and Judiciary Committee, July 14, 2004; U.S. Food and Drug Administration: "FDA Test Results of Prescription Drugs from Bogus Canadian Website Show All Products Are Fake or Substandard", July 13, 2004.
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DECEMBER 2004 VOLUME 35, NUMBER 9

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SCOTT S. WARREN; PAUL A. SOUDERS / CORBIS; ANDY HERNANDEZ / GETTY IMAGES; MICHAEL ROUGIER / LIFE

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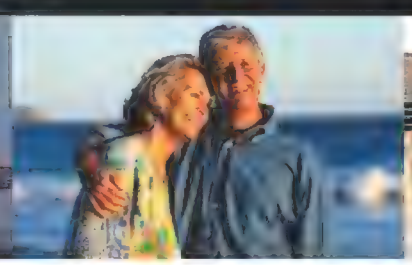

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Birds and Beasts

A new book on Audubon; making waves amid mad moose – BY CAREY WINFREY

IN WRITING his masterful new biography of John James Audubon, Pulitzer Prize-winning author Richard Rhodes solved a long-standing mystery about the wildlife painter. "All Audubon's previous biographers have speculated about the system he invented to set up his specimens to draw them," Rhodes says. "I was fortunate to come across a description of it by a young assistant in an overlooked letter: 'Now, the dear man had his chalks upon the table and upright in front of him was a pine board upon which was secured in position by means of long thin pins, the bird whose likeness he was transferring to the cardboard before him.'"

Pulitzer Prize-winner Rhodes and friend: Lucky to come across an overlooked description.

Rhodes goes on: "The grid board was set on edge, with the wires pointing toward the artist, and the specimen impaled on the wires. This arrangement put the grid behind the specimen and made the bird seem to float in space in whatever position Audubon decided to arrange it."

For more about the man Rhodes calls "a strange bird," please turn to page 72.

JIM DOHERTY, who served this magazine as an editor for nearly 20 years, was persuaded to come out of semi-retirement to write about moose on the loose in Anchorage, Alaska ("Herd on the Street," p. 54). The story, and Doherty's fascination with the animal, trace to an encounter during a canoe trip in Ontario a few years back. He and his wife, Sandy, and their youngest daughter, Emily, were enjoying an easygoing paddle up a lovely tea-colored river until they startled a large moose and two smaller ones grazing in a riverbank meadow. The imposing creature they took to be the mother went ballistic, thundering up and down the bank, tossing her head and snorting, the youngsters following suit. "The mud was flying, the noise was unbelievable," says Doherty. "It was moose bedlam! Actually, we thought it was pretty funny, until Mama charged into the water at us."

The Dohertys watched "appreciatively" as an immense head, ears back flat, eyes bulging, drew closer and closer. Doherty continues: "Finally, Sandy, who is the smart one in the family, spoke up. 'You know what I think?' she said. 'I think it's time for us to get the hell out of here.' By then Mama Moose had surged to within a couple paddle lengths of us. It's possible she had never before seen people. But if she had, I'll bet you she never saw any who could paddle half as fast as we did then."

Smithsonian PHOTO CONTEST

In September we published the rules for our second annual photo contest, which will accept both digital and mail submissions until midnight December 31, 2004. Rules for this year's contest can be found at www.photocontest.smithsonianmagazine.com.

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February 11 - 20
NATIVE ISLANDER GULLAH CELEBRATION
Hilton Head Island, SC, USA
www.gullahcelebration.com

February 13
VASANT PANCHAMI
New Delhi, India
www.hinduism.co.za/vasant.htm

Mar

March 10 - 11
NYEPI
Bali, Indonesia
www.indo.com/culture/nyepi.html

March 25
HOLI (FESTIVAL OF COLORS)
Kathmandu, Nepal
www.nepalhomepage.com/society/festivals/fagupurnima.html

Apr

April 11 - 19
LA FERIA DE ABRIL (SEVILLE SPRING FAIR)
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www.andalucia.com/festival/seville-feria.htm

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Being There

Robotic spacecraft allow geologists to explore other planets as if they were on-site

THE SPACECRAFT *Messenger*, launched by NASA in August, will travel for six-and-a-half years before it goes into orbit around the planet Mercury for a mission that's to last two days. Two Mercury days, that is—a day on the planet, from sunrise to sunset, being the equivalent of 176 days on Earth. *Messenger*'s instruments will image Mercury's surface—including an entire hemisphere no spacecraft has previously seen—measure the planet's gravity and magnetic field, and collect data on the structure and composition of its crust. Are the outer portions of the planet's gigantic iron core still molten? Of what consequence to Mercury's geologic history were volcanic activity, tectonic faulting and the mighty impacts of objects from space? The evidence needed to answer these questions is more than 50 million miles away, and *Messenger* has been sent to close the distance.

On the team responsible for the pathbreaking mission is Thomas Watters, a geologist at the Smithsonian's Center for Earth and Planetary Studies (CEPS). Indeed, CEPS scientists regularly assist NASA with its exploration of the heavens. The geologists and geophysicists of CEPS, a research unit within the Smithsonian's National Air and Space Museum (NASM), use images and data from Earth-orbiting satellites and manned and robotic space missions to trace the geologic history of the planets in our solar system. They start from a base of expert knowledge about what they can observe close up (volcanism, flooding, cratering, tectonics and sand movement on Earth), and against that local evidence they read the evidence returned from the heavens.

In January 2004, NASA guided the Rover vehicles *Spirit* and *Opportunity* to the surface of Mars, where the two surpassingly capable robots took on the role of flesh-and-blood geologists. They will likely continue in that role for much of 2005, maybe longer. Another CEPS geologist, John Grant, helped plan the Rovers' activities and has contributed to the machines' remote operation. The robots have picked at the planet's surface and touched their instruments to odd boulders, gray bedrock and rounded pebbles that may hold clues to the history of water on Mars. With each mission, we're brought closer to knowing whether water existed on the planet long enough to have sustained some form of life. The inquiry will be advanced yet again in summer 2005, when NASA launches the Mars Reconnaissance Orbiter. On board will be the most capable camera ever lifted into space—as inquisitive as a spy satellite and powerful enough to resolve features less than a yard across on the planet's surface. A radar sounder on the Orbiter will let scientists probe beneath the surface, to depths of more than a half-mile, in search of geologic layering and possible ice deposits. And as the Orbiter scans the planet and peers through its crust, CEPS scientists Bruce Campbell and John Grant will be among the pioneering observers back on Earth.

Spacecraft *Messenger* (artist's conception): Six years for two "days."

Great science—achievements that move boundaries, as do the projects in which CEPS researchers participate—is the lifeblood of a great science museum. Of course, collections, whether of objects or of data, are essential too. But at NASM, as throughout the Smithsonian, the collections are presented to the public by scientists, historians and other professionals who can speak of them with authority because of their research experience. CEPS staff, for example, curate two galleries in NASM, one about the Earth, the other about the planets. The exhibitions invite visitors to adjust their minds to the vast stretches of geologic time, and to imagine what it's like to walk other worlds. The effort to be at home on those worlds is, in the end, an effort to be more at home on this one, to better understand, that is, how the Earth came to be—and came to support life. Clues to our history may be lodged on distant planets, just as elements of their history may be etched into ours. And with skills at once visionary and precise, CEPS researchers seek and read the clues.

Lawrence M. Small
SECRETARY OF THE SMITHSONIAN INSTITUTION

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LETTERS

Readers respond to the October issue:

READY FOR A CLOSE-UP

I WAS FASCINATED by "Magnificent Magnifications," which shows beautiful microscopic images. As an art teacher who incorporates science into the visual arts curriculum, I have students paint watercolors based on cell systems and structures. The microscopic world is a rich source of inspiration. Artists spend great energy composing aesthetic images; nature does this effortlessly on an unimaginable scale.

LOUIS WEST
ABINGDON, MARYLAND

PIGS FOR FOXES?

IN "FIGHTING FOR FOXES," about the effort to restore endangered foxes on California's Channel Islands, the statement that "scientists are relocating the golden eagles to the mainland and plan to rid the island of pigs by killing them" made me ill. The pigs may not be endangered, but surely a better solution could be found.

JEAN BUSBY
MANASSAS, VIRGINIA

HOW DOES ONE justify completely exterminating one guiltless species from an area in order to benefit another? The pigs have not caused the problem; man, as usual, has. If it were the pigs that were endangered, would we kill off the foxes? Surely, if we truly wish to conserve nature, we must seek out humane solutions that respect the natural rights of all creatures concerned.

KEN RANDALL
HEBRON, CONNECTICUT

GOOD GOSSIP

WHILE ON THE SUBWAY reading Robert Darnton's article, "All the News That's Fit to Sing," about the ways 18th-century Parisians kept informed, I found myself saying "Ha!" out loud when I read how Mme. Doublet's servant would separate rumors into those that were substantiated and those that were not. And even without the Bibliothèque Nationale de France's illustration, I would have had no trouble, thanks to Darnton's colorful descriptions, imagining the setting surrounding the Tree of Cracow, where Parisians gathered to hear gossip.

MICHELLE OLVEIRA
BROOKLYN, NEW YORK

GRATEFUL FOR GRANT

AS A HIGH-SCHOOL ballplayer, I played many times at the old Polo Grounds in New York City. I can recall seeing Eddie Grant's plaque but never knew the story of why he was so honored ("Ultimate Sacrifice"). Thank you for making this hero come to life and reawakening wonderful memories.

HOWARD TANNENBAUM
BOYNTON BEACH, FLORIDA

THE TOUCHING STORY about Eddie Grant mentions other American athletes who made the "ultimate sacrifice" for their country, but it omitted Al Blozis. After a career at Georgetown University where he was a champion shot-putter, Blozis played tackle for the New York Giants for two outstanding seasons. At 6 feet 6 inches and 245 pounds, he was big for that era. While in the Army, he set a record for throwing a hand grenade more than 94 yards. Lieutenant Blozis died in the Vosges Mountains in France in January 1945 when he set out alone to find two lost members of his patrol.

MURRAY FARBER
FRESNO, CALIFORNIA

CORRECTION: *As we reported, Elmer Gedeon played for the Washington Senators in 1939 and was killed in World War II. But the photograph on page 80 is of Elmer Joseph "Joe" Gedeon, who played for the Senators in 1913 and 1914. We regret the error. —Ed.*

SPITTING IMAGE

I COULDN'T HELP but chuckle at art conservators James Coddington and Michael Duffy's "mild enzymatic" cleaning solution—spit—in "Cleaning Picasso." In our family, the saying "spit works wonders" has long been applied to the cleaning of soiled cheeks and stained shirts. And as most painters know, spit is also a wondrous "solution" for keeping paintbrushes in shape. So it seems only fitting that a little spit is being spilt on Picasso.

MARY J. LOHNES
BELLINGHAM, WASHINGTON

UNIVERSALLY NOTED

At last count, more than 285 readers have written to point out that in the story "Kilroy Was Here," the "mysterious poem" scrawled on a canvas berth on a Vietnam-bound troopship was adapted from Buffy Sainte-Marie's antiwar song "Universal Soldier." Both the National Museum of American History, which holds the artifact, and the magazine thank readers for the lyrical detective work. —Ed.

Please send letters to LettersEd@simag.si.edu or to **Letters, Smithsonian, MRC 951, P.O. Box 37012, Washington, D.C. 20013.** Include a telephone number and address. Letters may be edited for clarity or space. Because of the high volume of mail we receive, we cannot respond to all letters. Send queries about the Smithsonian Institution to info@si.edu or to VIARC, Public Inquiry Mail Service, P.O. Box 37012, Washington, D.C. 20013.

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Comfort Zone

A humble stove warmed Modernist Charles Sheeler's Cubist heart – BY PETER PLAGENS

CHARLES SHEELER (1883-1965) is one of the most important artists of the first half-century of American Modernism. Usually this judgment reflects his work as a painter, which is often referred to as "Precisionist"—smooth, machine-age realism with a Cubist spin. But Sheeler's reputation as a photographer is good enough to have earned him a major retrospective exhibition, organized by the Museum of Fine Arts in Boston. It opens next month at the Georgia O'Keeffe Museum in Santa Fe.

Sheeler, who was born in Philadelphia and studied at the Pennsylvania Academy of Fine Arts, went to Paris in 1909 at the moment Cubism was taking off like a skyrocket. Back in the States, however, nascently Modernist painting did not a living make. So he took up commercial photography, concentrating on architectural pictures. He was self-taught, his experience confined originally to the $5 box Brownie he owned as a teenager. While living in Philadelphia, he rented a farmhouse in Doylestown, Pennsylvania, 39 miles away, with the way-out artist Morton Schamberg. Sheeler was so fond of the house's 19th-century stove that he called it his "companion" and made it a subject of photographs he took at night using glaring artificial light that gave stark, dramatic shadows and bleached out unimportant textural details.

One thing that Sheeler and his "companion" had in common: they both smoked.

Sheeler was applying what he knew about Cubism to photography, and *Doylestown House: Interior with Stove* (c. 1917) is a tonal fugue of rectangles, triangles and a few crisp curves. Other shapes serve as punctuation, such as the mysterious gray circle between the window and door, and the grooved chunk of wood on the floor. In a drawing, the artist has total, inch-by-inch control over the distribution of tone. But the stove photograph is amazing precisely because it isn't a drawing. Sheeler could only concoct risky cantatas of light out of whatever sat in front of his lens and hope the camera caught them. Shortly after he took this picture—the masterpiece of his *Doylestown* series—a popular song about American soldiers returning home from World War I asked, "How ya gonna keep 'em down on the farm after they've seen Paree?" After Sheeler saw Paris, he did keep himself down on the farm—but on his own artistic terms, taking the best of Paris, and its Cubism, with him.

PETER PLAGENS is a painter and the art critic for Newsweek.

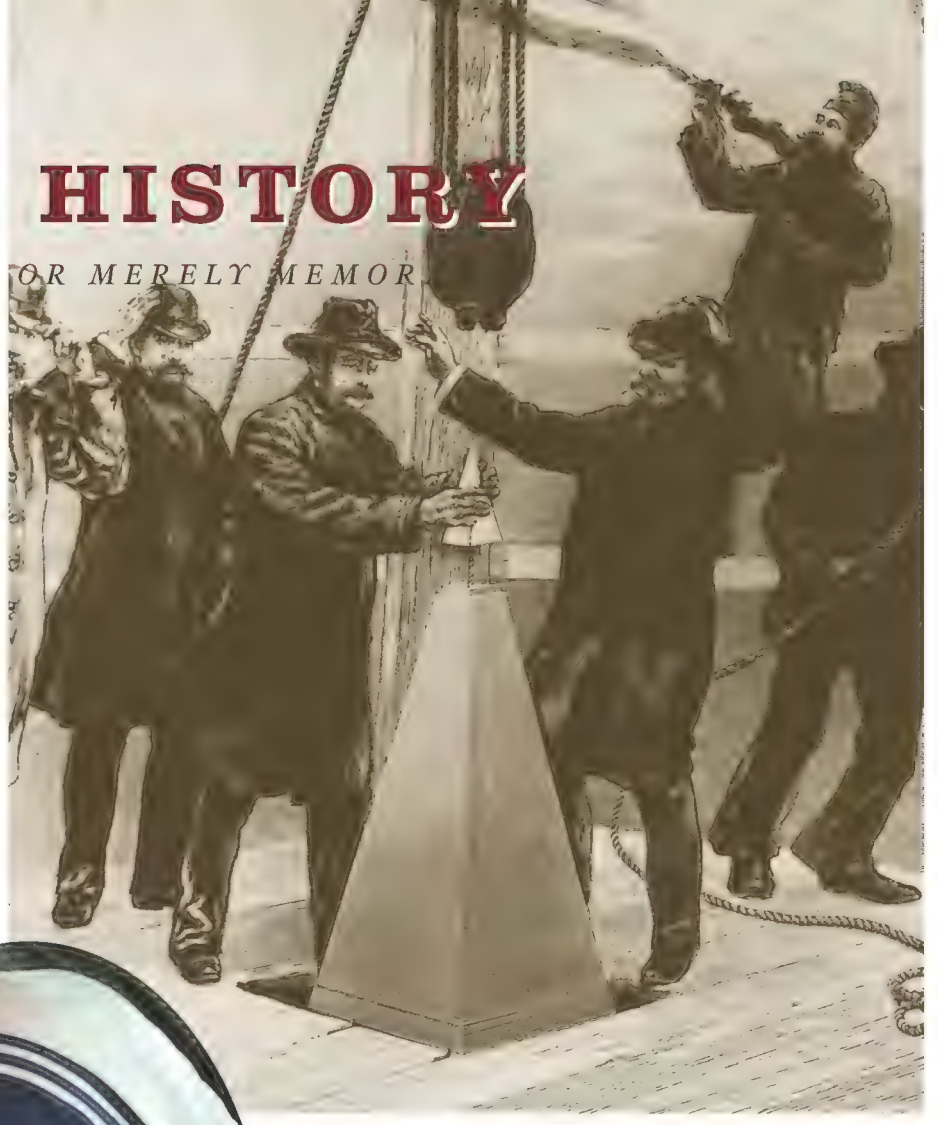
MUSEUM OF FINE ARTS, BOSTON. LANE COLLECTION

THIS MONTH IN HISTORY

DECEMBER ANNIVERSARIES—MOMENTOUS OR MERELY MEMOR

60 YEARS AGO:
BATTLING IN THE BULGE

December 16, 1944: Exhorting his troops to "gamble everything!" Adolf Hitler launches a surprise offensive against the Allies across an 85-mile front in the Ardennes region of Belgium and Luxembourg. He will lose his bet; after 32 days and 181,000 casualties on both sides, the Allies turn back the German forces. It is the beginning of the end; Germany surrenders May 4, 1945.



120 YEARS AGO:
POINT OF NO RETURN

As a gale buffets his perch above the nation's capital December 6, 1884, project leader P. H. McLaughlin caps the Washington Monument with an aluminum apex, completing 36 years of construction. At 555 feet, the marble-faced granite obelisk is the world's tallest man-made structure—until 1889 when it is topped by the Eiffel Tower. It remains the tallest masonry edifice.

25 YEARS AGO: ALL YOU NEED IS LOVE

"I believe that love begins at home, and if we can create a home for the poor I think that more and more love will spread," Mother Teresa tells an Oslo, Norway, audience as she receives the Nobel Peace Prize, December 11, 1979. The Macedonian-born Catholic nun is honored for her 30-year effort to mitigate the privation of the slums of Calcutta, India, where she founded the Missionaries of Charity in 1950. She dies in 1997, and in the first step to sainthood, is beatified by Pope John Paul II in 2003.

80 YEARS AGO:
A GALAXY FAR, FAR AWAY

Astronomer Edwin Hubble proves that there are galaxies beyond our own. Discovering variable stars called cepheids in the Andromeda nebula, he calculates that the formation is too distant to be part of the Milky Way and must itself be a galaxy. Today, his namesake space telescope requires robotic servicing (still on the drawing board) to continue its galactic photography beyond 2008.

125 YEARS AGO: THINKING AHEAD

Fearing their new operetta would be pirated in America, as their *H.M.S. Pinafore* had been, W. S. Gilbert and Arthur Sullivan stage its première in New York City's Fifth Avenue Theater on December 31, 1879. By opening *The Pirates of Penzance* stateside, the Englishmen secure its American copyright—and future royalties. One critic claims the tale of the dutiful pirate apprentice "can hardly be appreciated at a single hearing"; audiences will return for decades.

50 YEARS AGO: BROTHERLY LOVE

Doctors in Boston implant a kidney from Ronald Herrick (standing), 28, into his identical twin brother, Richard (seated), in the first successful human organ transplant, in 1954. The twins' genetic link lessens the chance of rejection, a primary concern. Richard lives to marry his nurse, and dies in 1962. Today in the U.S., 68 organ transplants are performed each day.

—ALISON McLEAN

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[*Swanson's TV-dinner tray, 1954*
NATIONAL MUSEUM OF AMERICAN HISTORY]

ERIC HARGER; SWANSON FOODS ARCHIVES, PINNACLE CORP.

HAD MY HYPERKINETIC MOTHER been inclined to meditate, her mantra would have consisted of two brand names: Birds Eye and Swanson. Mom was a working woman in the early 1950s, when that was far from the norm and, in suburban New Jersey, at least, not encouraged. For the record, my mother worked for my father at his real estate office in Westfield. Dad was a handsome man admired by women, and I have long suspected that part of her job was to keep an eye on him. But whatever her motives, she put in her days at the office and then came home to cook for the family, a necessary but unloved chore. So when Birds Eye presented her with frozen peas, she took it as a personal favor and did her best to serve the handy little cryogenic miracles at least five times a week. And when C.A. Swanson & Sons introduced the TV dinner in 1954, relieving mom of responsibility for the entire meal (except for the My-T-Fine

Swanson (in a 1950s ad) touted its dinners as timesavers—"no work before, no dishes after."

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tapioca pudding she favored for dessert), she must have thought the world a mighty fine place indeed.

If convenience was the mother of my mother's contentment, the mother of the TV dinner was that old serial procreator, necessity. In 1953, someone at Swanson colossally miscalculated the level of the American appetite for Thanksgiving turkey, leaving the company with some 260 tons of frozen birds sitting in ten refrigerated railroad cars. Enter the father of invention, Swanson salesman Gerry Thomas, a visionary inspired by the trays of pre-prepared food served on airlines. Ordering 5,000 aluminum trays, concocting a straightforward meal of turkey with corn-bread dressing and gravy, peas and sweet potatoes (both topped with a pat of butter), and recruiting an assembly line of women with spatulas and ice-cream scoops, Thomas and Swanson launched the TV dinner at a price of 98 cents (those are Eisenhower-era cents, of course). The company's grave doubts that the initial order would sell proved to be another miscalculation, though a much happier one for Swanson; in the first full year of production, 1954, ten million turkey dinners were sold.

The original marketing campaign for TV dinners was, if you will allow me, tray chic. A typical magazine ad showed a stylish woman wearing a smart green suit, a pert feathered hat and black gloves taking a TV dinner out of a grocery bag. In the background sits her smiling husband, in a tan suit and bow tie, comfortably reading his newspaper. The copy line for this bit of Ozzie and Harriet heaven reads: "I'm late—but dinner won't be."

My mother, every bit as well turned out as Madison Avenue's version of the happy housewife, didn't serve TV dinners every night, of course—the shame factor for failing to provide home cooking was considerably higher then than it is today. But she was quick to see in this manna from Swanson a magic that made it more pleasing to her children (though perhaps not to my father) than a meatloaf or roast chicken done from scratch. At the risk of trying to read the mind of the kid I was at the time, I suspect that the orderliness of the three precisely separated servings contrasted with the general turmoil of growing up, or the specific chaos of my bedroom. And in a culture where packaging is paramount, the idea that a complete meal could be contained in one slim, stackable container appealed mightily to the American yearning for simplicity, economy and efficiency.

But beyond those obvious attractions, Swanson's brave new product was aided immeasurably by its synergy with another increasingly powerful package, the television set. TV had already made inroads on the Norman Rockwell sanctity of the dinner hour. After all, once the day at school was discussed (reluctantly) by the kids, and the day at work was described (wearily) by father, and the weather and the state of the world were exhausted as subjects, the temptation arose, even in those more conversational days, to let the tube take over.

As home entertainment shifted from the piano (once a ubiquitous and nearly essential home accessory) to the big wooden box with its small flickering screen, the idea of watching—instead of listening to—programs at home seemed transformative, a tipping point into a changed world. Swanson's marketers clearly realized that this was a medium you could tie your message to; after all, the company had not tried to market Radio Dinners. The idea of pre-prepared meals, heated up at the last moment, seemed to fit right in with the spontaneous excitement of gathering around the screen to watch Milton Berle, Jack Benny and a couple of endearing hand puppets, Kukla and Ollie, along with their human friend, Fran.

Much has changed since then. Having invented the form, Swanson, now owned by Pinnacle Foods in Mountain Lakes, New Jersey, retains only 10 percent of the annual $1.2 billion frozen dinner market. With the advent of microwave ovens, the aluminum tray was replaced by paper. And way back in 1962, Swanson dropped the "TV" from its product label. But those of us who were there at the beginning, when meals and Uncle Miltie fatefully merged, will always think of TV dinners as one of the great hits of television's early years.

OWEN EDWARDS is a freelance writer based in San Francisco, California.

Magazine ad copy, courting 1950s women, chirped: "I'm late—but dinner won't be."

Frozen dinners (sold in TV-themed packaging, c. 1960) are a $1.2 billion market today.

WILLIAM GOTTLIEB / CORBIS

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Important CELEBREX Information: Prescription CELEBREX is not for everyone. People with aspirin-sensitive asthma or allergic reactions due to aspirin or other arthritis medications or certain drugs called sulfonamides should not take CELEBREX. In rare cases, serious stomach problems such as bleeding can occur without warning. The most common side effects in clinical trials were indigestion, diarrhea, and abdominal pain. CELEBREX should not be taken in late pregnancy. Tell your doctor if you have kidney or liver problems. For more information call 1-888-CELEBREX(235-3273) or visit www.celebrex.com

Please see important product information on adjacent page.

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CELEBREX®
(celecoxib capsules)

Brief summary of prescribing information

INDICATIONS AND USAGE

CELEBREX is indicated:

1) For relief of the signs and symptoms of osteoarthritis.
2) For relief of the signs and symptoms of rheumatoid arthritis in adults.
3) For the management of acute pain in adults (see CLINICAL STUDIES).
4) For the treatment of primary dysmenorrhea.
5) To reduce the number of adenomatous colorectal polyps in familial adenomatous polyposis (FAP), as an adjunct to usual care (e.g., endoscopic surveillance, surgery). It is not known whether there is a clinical benefit from a reduction in the number of colorectal polyps in FAP patients. It is also not known whether the effects of CELEBREX treatment will persist after CELEBREX is discontinued. The efficacy and safety of CELEBREX treatment in patients with FAP beyond six months have not been studied (see CLINICAL STUDIES, WARNINGS and PRECAUTIONS sections).

CONTRAINDICATIONS

CELEBREX is contraindicated in patients with known hypersensitivity to celecoxib. CELEBREX should not be given to patients who have demonstrated allergic-type reactions to sulfonamides. CELEBREX should not be given to patients who have experienced asthma, urticaria, or allergic-type reactions after taking aspirin or other NSAIDs. Severe, rarely fatal, anaphylactic-like reactions to NSAIDs have been reported in such patients (see WARNINGS — Anaphylactoid Reactions, and PRECAUTIONS — Preexisting Asthma).

WARNINGS

Gastrointestinal (GI) Effects — Risk of GI Ulceration, Bleeding, and Perforation: Serious gastrointestinal toxicity such as bleeding, ulceration, and perforation of the stomach, small intestine or large intestine, can occur at any time, with or without warning symptoms, in patients treated with nonsteroidal anti-inflammatory drugs (NSAIDs). Minor upper gastrointestinal problems, such as dyspepsia, are common and may also occur at any time during NSAID therapy. Therefore, physicians and patients should remain alert for ulceration and bleeding, even in the absence of previous GI tract symptoms (see PRECAUTIONS – Hematological Effects). Patients should be informed about the signs and/or symptoms of serious GI toxicity and the steps to take if they occur. The utility of periodic laboratory monitoring has not been demonstrated, nor has it been adequately assessed. Only one in five patients who develop a serious upper GI adverse event on NSAID therapy is symptomatic. It has been demonstrated that upper GI ulcers, gross bleeding or perforation, caused by NSAIDs, appear to occur in approximately 1% of patients treated for 3-6 months, and in about 2-4% of patients treated for one year. These trends continue thus, increasing the likelihood of developing a serious GI event at some time during the course of therapy. However, even short-term therapy is not without risk. NSAIDs should be prescribed with extreme caution in patients with a prior history of ulcer disease or gastrointestinal bleeding. Most spontaneous reports of fatal GI events are in elderly or debilitated patients and therefore special care should be taken in treating this population. **To minimize the potential risk for an adverse GI event, the lowest effective dose should be used for the shortest possible duration.** For high-risk patients, alternate therapies that do not involve NSAIDs should be considered. Studies have shown that patients with a *prior history of peptic ulcer disease and/or gastrointestinal bleeding* and who use NSAIDs, have a greater than 10-fold higher risk for developing a GI bleed than patients with neither of these risk factors. In addition to a past history of ulcer disease, pharmacoepidemiological studies have identified several other co-therapies or co-morbid conditions that may increase the risk for GI bleeding such as treatment with oral corticosteroids, treatment with anticoagulants, longer duration of NSAID therapy, smoking, alcoholism, older age, and poor general health status.

CLASS Study: The estimated cumulative rates at 9 months of *complicated and symptomatic ulcers* (an adverse event similar but not identical to the "upper GI ulcers, gross bleeding or perforation" described in the preceding paragraphs) for patients treated with CELEBREX 400 mg BID (see Special Studies – *Use with Aspirin* are described in the following paragraph. It also displays results for patients less than or greater than or equal to the age of 65 years. The differences in rates between CELEBREX alone and CELEBREX with ASA groups may be due to the higher risk for GI events in ASA users.

***Complicated and Symptomatic Ulcer* Rates in Patients Taking CELEBREX 400 mg BID (Kaplan-Meier Rates at 9 months [%]) Based on Risk Factors:** All Patients – Celecoxib alone (n=3105) 0.78% and Celecoxib with ASA (n=892) 2.19%; Patients <65 Years – Celecoxib alone (n=2025) 0.47% and Celecoxib with ASA (n=403) 1.28%; Patients ≥ 65 Years – Celecoxib alone (n=1080) 1.40% and Celecoxib with ASA (n=479) 3.06%.

In a small number of patients with a history of ulcer disease, the *complicated and symptomatic ulcer* rates in patients taking CELEBREX alone or CELEBREX with ASA were, respectively, 2.66% (n=243) and 6.85% (n=91) at 48 weeks. These results are to be expected in patients with a prior history of ulcer disease (see WARNINGS – Gastrointestinal (GI) Effects – Risk of GI Ulceration, Bleeding, and Perforation).

Anaphylactoid Reactions: As with NSAIDs in general, anaphylactoid reactions have occurred in patients without known prior exposure to CELEBREX. In post-marketing experience, rare cases of anaphylactic reactions and angioedema have been reported in patients receiving CELEBREX. CELEBREX should not be given to patients with the aspirin triad. This symptom complex typically occurs in asthmatic patients who experience rhinitis with or without nasal polyps, or who exhibit severe, potentially fatal bronchospasm after taking aspirin or other NSAIDs (see CONTRAINDICATIONS and PRECAUTIONS — Preexisting Asthma). Emergency help should be sought in cases where an anaphylactoid reaction occurs.

Advanced Renal Disease: No information is available from controlled clinical studies regarding the use of CELEBREX in patients with advanced kidney disease. Therefore, treatment with CELEBREX is not recommended in these patients with advanced kidney disease. If CELEBREX therapy must be initiated, close monitoring of the patient's kidney function is advisable (see PRECAUTIONS — Renal Effects).

Pregnancy: In late pregnancy CELEBREX should be avoided because it may cause premature closure of the ductus arteriosus (see PRECAUTIONS - Pregnancy).

Familial Adenomatous Polyposis (FAP): Treatment with CELEBREX in FAP has not been shown to reduce the risk of gastrointestinal cancer or the need for prophylactic colectomy or other FAP-related surgeries. Therefore, the usual care of FAP patients should not be altered because of the concurrent administration of CELEBREX. In particular, the frequency of routine endoscopic surveillance should not be decreased and prophylactic colectomy or other FAP-related surgeries should not be delayed.

PRECAUTIONS

General: CELEBREX cannot be expected to substitute for corticosteroids or to treat corticosteroid insufficiency. Abrupt discontinuation of corticosteroids may lead to exacerbation of corticosteroid-responsive illness. Patients on prolonged corticosteroid therapy should have their therapy tapered slowly if a decision is made to discontinue corticosteroids.

The pharmacological activity of CELEBREX in reducing inflammation, and possibly fever, may diminish the utility of these diagnostic signs in detecting infectious complications of presumed noninfectious, painful conditions.

Hepatic Effects: Borderline elevations of one or more liver-associated enzymes may occur in up to 15% of patients taking NSAIDs, and notable elevations of ALT or AST (approximately 3 or more times the upper limit of normal) have been reported in approximately 1% of patients in clinical trials with NSAIDs. These laboratory abnormalities may progress, may remain unchanged, or may be transient with continuing therapy. Rare cases of severe hepatic reactions, including jaundice and fatal fulminant hepatitis, liver necrosis and hepatic failure (some with fatal outcome) have been reported with NSAIDs, including CELEBREX (see ADVERSE REACTIONS – post-marketing experience). In controlled clinical trials of CELEBREX, the incidence of borderline elevations (greater than or equal to 1.2 times and less than 3 times the upper limit of normal) of liver-associated enzymes was 6% for CELEBREX and 5% for placebo, and approximately 0.2% of patients taking CELEBREX and 0.3% of patients taking placebo had notable elevations of ALT and AST.

A patient with symptoms and/or signs suggesting liver dysfunction, or in whom an abnormal liver test has occurred, should be monitored carefully for evidence of the development of a more severe hepatic reaction while on therapy with CELEBREX. If clinical signs and symptoms consistent with liver disease develop, or if systemic manifestations occur (e.g., eosinophilia, rash, etc.), CELEBREX should be discontinued.

Renal Effects: Long-term administration of NSAIDs has resulted in renal papillary necrosis and other renal injury. Renal toxicity has also been seen in patients in whom renal prostaglandins have a compensatory role in the maintenance of renal perfusion. In these patients, administration of a nonsteroidal anti-inflammatory drug may cause a dose-dependent reduction in prostaglandin formation and, secondarily, in renal blood flow, which may precipitate overt renal decompensation. Patients at greatest risk of this reaction are those with impaired renal function, heart failure, liver dysfunction, those taking diuretics and ACE inhibitors, and the elderly. Discontinuation of NSAID therapy is usually followed by recovery to the pretreatment state. Clinical trials with CELEBREX have shown renal effects similar to those observed with comparator NSAIDs.

Caution should be used when initiating treatment with CELEBREX in patients with considerable dehydration. It is advisable to rehydrate patients first and then start therapy with CELEBREX. Caution is also recommended in patients with preexisting kidney disease (see WARNINGS—Advanced Renal Disease).

Hematological Effects: Anemia is sometimes seen in patients receiving CELEBREX. In controlled clinical trials the incidence of anemia was 0.8% with CELEBREX and 0.4% with placebo. Patients on long-term treatment with CELEBREX should have their hemoglobin or hematocrit checked if they exhibit any signs or symptoms of anemia or blood loss. CELEBREX does not generally affect platelet counts, prothrombin time (PT), or partial thromboplastin time (PTT), and does not inhibit platelet aggregation at indicated dosages (see CLINICAL STUDIES—Special Studies—Platelets).

Fluid Retention, Edema, and Hypertension: Fluid retention and edema have been observed in some patients taking CELEBREX (see ADVERSE REACTIONS). In the CLASS study (see Special Studies – *Use with Aspirin*), the Kaplan-Meier cumulative rates at 9 months of peripheral edema in patients on CELEBREX 400 mg BID (4-fold and 2-fold the recommended OA and RA doses, respectively, and the approved dose for FAP), ibuprofen 800 mg TID and diclofenac 75 mg BID were 4.5%, 6.9% and 4.7%, respectively. The rates of hypertension in the CELEBREX, ibuprofen and diclofenac-treated patients were 2.4%, 4.2% and 2.5%, respectively. As with other NSAIDs, CELEBREX should be used with caution in patients with fluid retention, hypertension, or heart failure.

Preexisting Asthma: Patients with asthma may have aspirin-sensitive asthma. The use of aspirin in patients with aspirin-sensitive asthma has been associated with severe bronchospasm which can be fatal. Since cross reactivity, including bronchospasm, between aspirin and other nonsteroidal anti-inflammatory drugs has been reported in such aspirin-sensitive patients, CELEBREX should not be administered to patients with this form of aspirin sensitivity and should be used with caution in patients with preexisting asthma.

Information for Patients: CELEBREX can cause discomfort and, rarely, more serious side effects, such as gastrointestinal bleeding, which may result in hospitalization and even fatal outcomes. Although serious GI tract ulcerations and bleeding can occur without warning symptoms, patients should be alert for the signs and symptoms of ulcerations and bleeding, and should ask for medical advice when observing any indicative signs or symptoms. Patients should be apprised of the importance of this follow-up (see WARNINGS – Gastrointestinal (GI) Effects - Risk of Gastrointestinal Ulceration, Bleeding, and Perforation).

Patients should promptly report signs or symptoms of gastrointestinal ulceration or bleeding, skin rash, unexplained weight gain, or edema to their physicians.

Patients should be informed of the warning signs and symptoms of hepatotoxicity (e.g., nausea, fatigue, lethargy, pruritus, jaundice, right upper quadrant tenderness, and "flu-like" symptoms). If these occur, patients should be instructed to stop therapy and seek immediate medical therapy.

Patients should also be instructed to seek immediate emergency help in the case of an anaphylactoid reaction (see WARNINGS).

In late pregnancy CELEBREX should be avoided because it may cause premature closure of the ductus arteriosus.

Patients with familial adenomatous polyposis (FAP), should be informed that CELEBREX has not been shown to reduce colorectal, duodenal or other FAP-related cancers, or the need for endoscopic surveillance, prophylactic or other FAP-related surgery. Therefore, all patients with FAP should be instructed to continue the usual care while receiving CELEBREX.

Laboratory Tests: Because serious GI tract ulcerations and bleeding can occur without warning symptoms, physicians should monitor for signs or symptoms of GI bleeding. In controlled clinical trials, elevated BUN occurred more frequently in patients receiving CELEBREX compared with patients on placebo. This laboratory abnormality was also seen in patients who received comparator NSAIDs in these studies. The clinical significance of this abnormality has not been established.

Drug Interactions: *General:* Celecoxib metabolism is predominantly mediated via cytochrome P450 2C9 in the liver. Co-administration of celecoxib with drugs that are known to inhibit 2C9 should be done with caution.

In vitro studies indicate that celecoxib, although not a substrate, is an inhibitor of cytochrome P450 2D6. Therefore, there is a potential for an *in vivo* drug interaction with drugs that are metabolized by P450 2D6.

ACE-inhibitors: Reports suggest that NSAIDs may diminish the antihypertensive effect of Angiotensin Converting Enzyme (ACE) inhibitors. This interaction should be given consideration in patients taking CELEBREX concomitantly with ACE-inhibitors.

Furosemide: Clinical studies, as well as post-marketing observations, have shown that NSAIDs can reduce the natriuretic effect of furosemide and thiazides in some patients. This response has been attributed to inhibition of renal prostaglandin synthesis.

Aspirin: CELEBREX can be used with low-dose aspirin. However, concomitant administration of aspirin with CELEBREX increases the rate of GI ulceration or other complications, compared to use of CELEBREX alone (see CLINICAL STUDIES — Special Studies — *Use with Aspirin* and WARNINGS - Gastrointestinal (GI) Effects - Risk of GI Ulceration, Bleeding, and Perforation – CLASS Study).

Because of its lack of platelet effects, CELEBREX is not a substitute for aspirin for cardiovascular prophylaxis.

Fluconazole: Concomitant administration of fluconazole at 200 mg QD resulted in a two-fold increase in celecoxib plasma concentration. This increase is due to the inhibition of celecoxib metabolism via P450 2C9 by fluconazole (see Pharmacokinetics — Metabolism). CELEBREX should be introduced at the lowest recommended dose in patients receiving fluconazole.

Lithium: In a study conducted in healthy subjects, mean steady-state lithium plasma levels increased approximately 17% in subjects receiving lithium 450 mg BID with CELEBREX 200 mg BID as compared to subjects receiving lithium alone. Patients on lithium treatment should be closely monitored when CELEBREX is introduced or withdrawn.

Methotrexate: In an interaction study of rheumatoid arthritis patients taking methotrexate, CELEBREX did not have a significant effect on the pharmacokinetics of methotrexate.

Warfarin: Anticoagulant activity should be monitored, particularly in the first few days, after initiating or changing CELEBREX therapy in patients receiving warfarin or similar agents, since these patients are at an increased risk of bleeding complications. The effect of celecoxib on the anticoagulant effect of warfarin was studied in a group of healthy subjects receiving daily doses of 2.5 mg of warfarin. In these subjects, celecoxib did not alter the anticoagulant effect of warfarin as determined by prothrombin time. However, in post-marketing experience, bleeding events have been reported, predominantly in the elderly, in association with increases in prothrombin time in patients receiving CELEBREX concurrently with warfarin.

Carcinogenesis, mutagenesis, impairment of fertility: Celecoxib was not carcinogenic in rats given oral doses up to 200 mg/kg for females and 10 mg/kg for males and in mice given oral doses up to 25 mg/kg for males and 50 mg/kg for females (approximately equal to 2- to 4-fold the human exposure as measured by the AUC_{0-24} at 200 mg BID) for in mice given oral doses up to 25 mg/kg for males and 50 mg/kg for females (approximately equal to human exposure as measured by the AUC_{0-24} at 200 mg BID) for two years.

Celecoxib was not mutagenic in an Ames test and a mutation assay in Chinese hamster ovary (CHO) cells, nor clastogenic in a chromosome aberration assay in CHO cells and an *in vivo* micronucleus test in rat bone marrow.

Celecoxib did not impair male and female fertility in rats at oral doses up to 600 mg/kg/day (approximately 11-fold human exposure at 200 mg BID based on the AUC_{0-24}).

Pregnancy

Teratogenic effects: Pregnancy Category C. Celecoxib at oral doses ≥150 mg/kg/day (approximately 2-fold human exposure at 200 mg BID as measured by AUC_{0-24}), caused an increased incidence of ventricular septal defects, a rare event, and fetal alterations, such as ribs fused, sternebrae fused and sternebrae misshapen when rabbits were treated throughout organogenesis. A dose-dependent increase in diaphragmatic hernias was observed when rats were given celecoxib at oral doses ≥30 mg/kg/day (approximately 6-fold human exposure based on the AUC_{0-24} at 200 mg BID) throughout organogenesis. There are no studies in pregnant women. CELEBREX should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nonteratogenic effects: Celecoxib produced pre-implantation and post-implantation losses and reduced embryo/fetal survival in rats at oral dosages ≥50 mg/kg/day (approximately 6-fold human exposure based on the AUC_{0-24} at 200 mg BID). These changes are expected with inhibition of prostaglandin synthesis and are not the result of permanent alteration of female reproductive function, nor are they expected at clinical exposures. No studies have been conducted to evaluate the effect of celecoxib on the closure of the ductus arteriosus in humans. Therefore, use of CELEBREX during the third trimester of pregnancy should be avoided.

Labor and delivery: Celecoxib produced no evidence of delayed labor or parturition at oral doses up to 100 mg/kg in rats (approximately 7-fold human exposure as measured by the AUC_{0-24} at 200 mg BID). The effects of CELEBREX on labor and delivery in pregnant women are unknown.

Nursing mothers: Celecoxib is excreted in the milk of lactating rats at concentrations similar to those in plasma. Limited data from one subject indicate that celecoxib is also excreted in human milk. Because many drugs are excreted in human milk and because of the potential for serious adverse reactions in nursing infants from CELEBREX, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use: Safety and effectiveness in pediatric patients below the age of 18 years have not been evaluated.

Geriatric Use: Of the total number of patients who received CELEBREX in clinical trials, more than 3,300 were 65-74 years of age, while approximately 1,300 additional patients were 75 years and over. No substantial differences in effectiveness were observed between these subjects and younger subjects. In clinical studies comparing renal function as measured by the GFR, BUN and creatinine, and platelet function as measured by bleeding time and platelet aggregation, the results were not different between elderly and young volunteers. However, as with other NSAIDs, including those that selectively inhibit COX-2, there have been more spontaneous post-marketing reports of fatal GI events and acute renal failure in the elderly than in younger patients (see WARNINGS – Gastrointestinal (GI) Effects – Risk of GI Ulceration, Bleeding, and Perforation).

ADVERSE REACTIONS

Of the CELEBREX-treated patients in the premarketing controlled clinical trials, approximately 4,250 were patients with OA, approximately 2,100 were patients with RA, and approximately 1,050 were patients with post-surgical pain. More than 8,500 patients have received a total daily dose of CELEBREX of 200 mg (100 mg BID or 200 mg QD) or more, including more than 400 treated at 800 mg (400 mg BID). Approximately 3,900 patients have received CELEBREX at these doses for 6 months or more; approximately 2,300 of these have received it for 1 year or more and 124 of these have received it for 2 years or more.

Adverse events from CELEBREX premarketing controlled arthritis trials: The following lists all adverse events, regardless of causality, occurring in ≥2% of patients receiving CELEBREX from 12 controlled studies conducted in patients with OA or RA that included a placebo and/or a positive control group (n=4146): Abdominal pain 4.1%, Diarrhea 5.6%, Dyspepsia 6.8%, Flatulence 2.2%, Nausea 3.5%, Back pain 2.8%, Peripheral edema 2.1%, Injury accidental 2.9%, Dizziness 2.0%, Headache 15.8%, Insomnia 2.3%, Pharyngitis 2.3%, Rhinitis 2.0%, Sinusitis 6.0%, Upper respiratory tract infection 8.1%, Rash 2.2%.

In placebo- or active-controlled clinical trials, the discontinuation rate due to adverse events was 7.1% for patients receiving CELEBREX and 6.1% for patients receiving placebo. Among the most common reasons for discontinuation due to adverse events in the CELEBREX treatment groups were dyspepsia and abdominal pain (cited as reasons for discontinuation in 0.8% and 0.7% of CELEBREX patients, respectively). Among patients receiving placebo, 0.6% discontinued due to dyspepsia and 0.6% withdrew due to abdominal pain.

The following adverse events occurred in 0.1 - 1.9% of patients regardless of causality.

CELEBREX (100 - 200 mg BID or 200 mg QD): *Gastrointestinal:* Constipation, diverticulitis, dysphagia, eructation, esophagitis, gastritis, gastroenteritis, gastroesophageal reflux, hemorrhoids, hiatal hernia, melena, dry mouth, stomatitis, tenesmus, tooth disorder, vomiting; ***Cardiovascular:*** Aggravated hypertension, angina pectoris, coronary artery disorder, myocardial infarction; ***General:*** Allergy aggravated, allergic reaction, asthenia, chest pain, cyst NOS, edema generalized, face edema, fatigue, fever, hot flushes, influenza like symptoms, pain, peripheral pain; ***Resistance mechanism disorders:*** Herpes simplex, herpes zoster, infection bacterial, infection fungal, infection soft tissue, infection viral, moniliasis, moniliasis genital, otitis media; ***Central, peripheral nervous system:*** Leg cramps, hypertonia, hypoesthesia, migraine, neuralgia, neuropathy, paresthesia, vertigo; ***Female reproductive:*** Breast fibroadenosis, breast neoplasm, breast pain, dysmenorrhea, menstrual disorder, vaginal hemorrhage, vaginitis; ***Male reproductive:*** Prostatic disorder; ***Hearing and vestibular:*** Deafness, ear abnormality, earache, tinnitus; ***Heart rate and rhythm:*** Palpitation, tachycardia; ***Liver and biliary system:*** Hepatic function abnormal, SGOT increased, SGPT increased; ***Metabolic and nutritional:*** BUN increased, CPK increased, diabetes mellitus, hypercholesterolemia, hyperglycemia, hypokalemia, NPN increase, creatinine increased, alkaline phosphatase increased, weight increase; ***Musculoskeletal:*** Arthralgia, arthrosis, bone disorder, fracture accidental, myalgia, neck stiffness, synovitis, tendinitis; ***Platelets (bleeding or clotting):*** Ecchymosis, epistaxis, thrombocythemia; ***Psychiatric:*** Anorexia, anxiety, appetite increased, depression, nervousness, somnolence; ***Hemic:*** Anemia; ***Respiratory:*** Bronchitis, bronchospasm, bronchospasm aggravated, coughing, dyspnea, laryngitis, pneumonia; ***Skin and appendages:*** Alopecia, dermatitis, nail disorder, photosensitivity reaction, pruritus, rash erythematous, rash maculopapular, skin disorder, skin dry, sweating increased, urticaria; ***Application site disorders:*** Cellulitis, dermatitis contact, injection site reaction, skin nodule; ***Special senses:*** Taste perversion; ***Urinary system:*** Albuminuria, cystitis, dysuria, hematuria, micturition frequency, renal calculus, urinary incontinence, urinary tract infection; ***Vision:*** Blurred vision, cataract, conjunctivitis, eye pain, glaucoma.

Other serious adverse reactions which occur rarely (estimated <0.1%), regardless of causality: The following serious adverse events have occurred rarely in patients taking CELEBREX. Cases reported only in the post-marketing experience are indicated in *italics*.

Cardiovascular: Syncope, congestive heart failure, ventricular fibrillation, pulmonary embolism, cerebrovascular accident, peripheral gangrene, thrombophlebitis, *vasculitis;* ***Gastrointestinal:*** Intestinal obstruction, intestinal perforation, gastrointestinal bleeding, colitis with bleeding, esophageal perforation, pancreatitis, ileus; ***Liver and biliary system:*** Cholelithiasis, *hepatitis, jaundice, liver failure;* ***Hemic and lymphatic:*** Thrombocytopenia, *agranulocytosis, aplastic anemia, pancytopenia, leukopenia;* ***Metabolic:*** *Hypoglycemia, hyponatremia;* ***Nervous system:*** *Aseptic meningitis,* ataxia, suicide; ***Renal:*** Acute renal failure, *interstitial nephritis;* ***Skin:*** *Erythema multiforme, exfoliative dermatitis, Stevens-Johnson syndrome, toxic epidermal necrolysis;* ***General:*** Sepsis, sudden death, *anaphylactoid reaction, angioedema.*

Safety Data from CLASS Study:

Hematological Events

During this study (see Special Studies – *Use with Aspirin*), the incidence of clinically significant decreases in hemoglobin (>2 g/dL) confirmed by repeat testing was lower in patients on CELEBREX 400 mg BID (4-fold and 2-fold the recommended OA and RA doses, respectively, and the approved dose for FAP) compared to patients on either diclofenac 75 mg BID or ibuprofen 800 mg TID: 0.5%, 1.3% and 1.9%, respectively. The lower incidence of events with CELEBREX was maintained with or without ASA use (see CLINICAL STUDIES – Special Studies – Platelets).

Withdrawals/Serious Adverse Events:

Kaplan-Meier cumulative rates at 9 months for withdrawals due to adverse events for CELEBREX, diclofenac and ibuprofen were 24%, 29%, and 26%, respectively. Rates for serious adverse events (i.e. those causing hospitalization or felt to be life threatening or otherwise medically significant) regardless of causality were not different across treatment groups, respectively, 8%, 7%, and 8%.

Based on Kaplan-Meier cumulative rates for investigator-reported serious cardiovascular thromboembolic adverse events*, there were no differences between the CELEBREX, diclofenac, or ibuprofen treatment groups. The rates in all patients at 9 months for CELEBREX, diclofenac, and ibuprofen were 1.2%, 1.4%, and 1.1%, respectively. The rates for non-ASA users in each of the three treatment groups were less than 1%. The rates for myocardial infarction in each of the three non-ASA treatment groups were less than 0.2%.

*Includes myocardial infarction, pulmonary embolism, deep venous thrombosis, unstable angina, transient ischemic attacks or ischemic cerebrovascular accidents.

Adverse events from analgesia and dysmenorrhea studies. Approximately 1,700 patients were treated with CELEBREX in analgesia and dysmenorrhea studies. All patients in post-oral surgery pain studies received a single dose of study medication. Doses up to 600 mg/day of CELEBREX were studied in primary dysmenorrhea and post-orthopedic surgery pain studies. The types of adverse events in the analgesia and dysmenorrhea studies were similar to those reported in arthritis studies. The only additional adverse event reported was post-dental extraction alveolar osteitis (dry socket) in the post-oral surgery pain studies.

Adverse events from the controlled trial in familial adenomatous polyposis. The adverse event profile reported for the 83 patients with familial adenomatous polyposis enrolled in the randomized, controlled clinical trial was similar to that reported for patients in the arthritis controlled trials. Intestinal anastomotic ulceration was the only new adverse event reported in the FAP trial, regardless of causality, and was observed in 3 of 58 patients (one at 100 mg BID, and two at 400 mg BID) who had prior intestinal surgery.

OVERDOSAGE

No overdoses of CELEBREX were reported during clinical trials. Doses up to 2400 mg/day for up to 10 days in 12 patients did not result in serious toxicity. Symptoms following acute NSAID overdoses are usually limited to lethargy, drowsiness, nausea, vomiting, and epigastric pain, which are generally reversible with supportive care. Gastrointestinal bleeding can occur. Hypertension, acute renal failure, respiratory depression and coma may occur, but are rare. Anaphylactoid reactions have been reported with therapeutic ingestion of NSAIDs, and may occur following an overdose.

Patients should be managed by symptomatic and supportive care following an NSAID overdose. There are no specific antidotes. No information is available regarding the removability of celecoxib by hemodialysis, but based on its high degree of plasma protein binding (>97%) dialysis is unlikely to be useful in overdose. Emesis and/or activated charcoal (60 to 100 g in adults, 1 to 2 g/kg in children) and/or osmotic cathartic may be indicated in patients seen within 4 hours of ingestion with symptoms or following a large overdose. Forced diuresis, alkalinization of urine, hemodialysis, or hemoperfusion may not be useful due to high protein binding.

DOSAGE AND ADMINISTRATION

For osteoarthritis and rheumatoid arthritis, the lowest dose of CELEBREX should be sought for each patient. These doses can be given without regard to timing of meals.

Osteoarthritis: For relief of the signs and symptoms of osteoarthritis the recommended oral dose is 200 mg per day administered as a single dose or as 100 mg twice per day.

Rheumatoid arthritis: For relief of the signs and symptoms of rheumatoid arthritis the recommended oral dose is 100 to 200 mg twice per day.

Management of Acute Pain and Treatment of Primary Dysmenorrhea: The recommended dose of CELEBREX is 400 mg initially, followed by an additional 200 mg dose if needed on the first day. On subsequent days, the recommended dose is 200 mg twice daily as needed.

Familial adenomatous polyposis (FAP): Usual medical care for FAP patients should be continued while on CELEBREX. To reduce the number of adenomatous colorectal polyps in patients with FAP, the recommended oral dose is 400 mg twice per day to be taken with food.

Special Populations

Hepatic insufficiency: The daily recommended dose of CELEBREX capsules in patients with moderate hepatic impairment (Child-Pugh Class B) should be reduced by approximately 50% (see CLINICAL PHARMACOLOGY – Special Populations).

HOW SUPPLIED

CELEBREX 100-mg capsules are white, reverse printed white on blue band of body and cap with markings of *7767* on the cap and 100 on the body, supplied as:

NDC Number	Size
0025-1520-31	bottle of 100
0025-1520-51	bottle of 500
0025-1520-34	carton of 100 unit dose

CELEBREX 200-mg capsules are white, with reverse printed white on gold band with markings of 7767 on the cap and 200 on the body, supplied as:

NDC Number	Size
0025-1525-31	bottle of 100
0025-1525-51	bottle of 500
0025-1525-34	carton of 100 unit dose

CELEBREX 400-mg capsules are white, with reverse printed white on green band with markings of 7767 on the cap and 400 on the body, supplied as:

NDC Number	Size
0025-1530-02	bottle of 60
0025-1530-01	carton of 100 unit dose

Store at 25°C (77°F); excursions permitted to 15-30°C (59-86°F) [see USP Controlled Room Temperature].

Rx only

Revised January 2004

Manufactured for:
G.D. Searle LLC
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Chicago, IL 60680, USA
Pfizer Inc
New York, NY 10017, USA

by:
Searle Ltd.
Caguas, PR 00725

CELEBREX®
(celecoxib capsules)

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CL224328-B

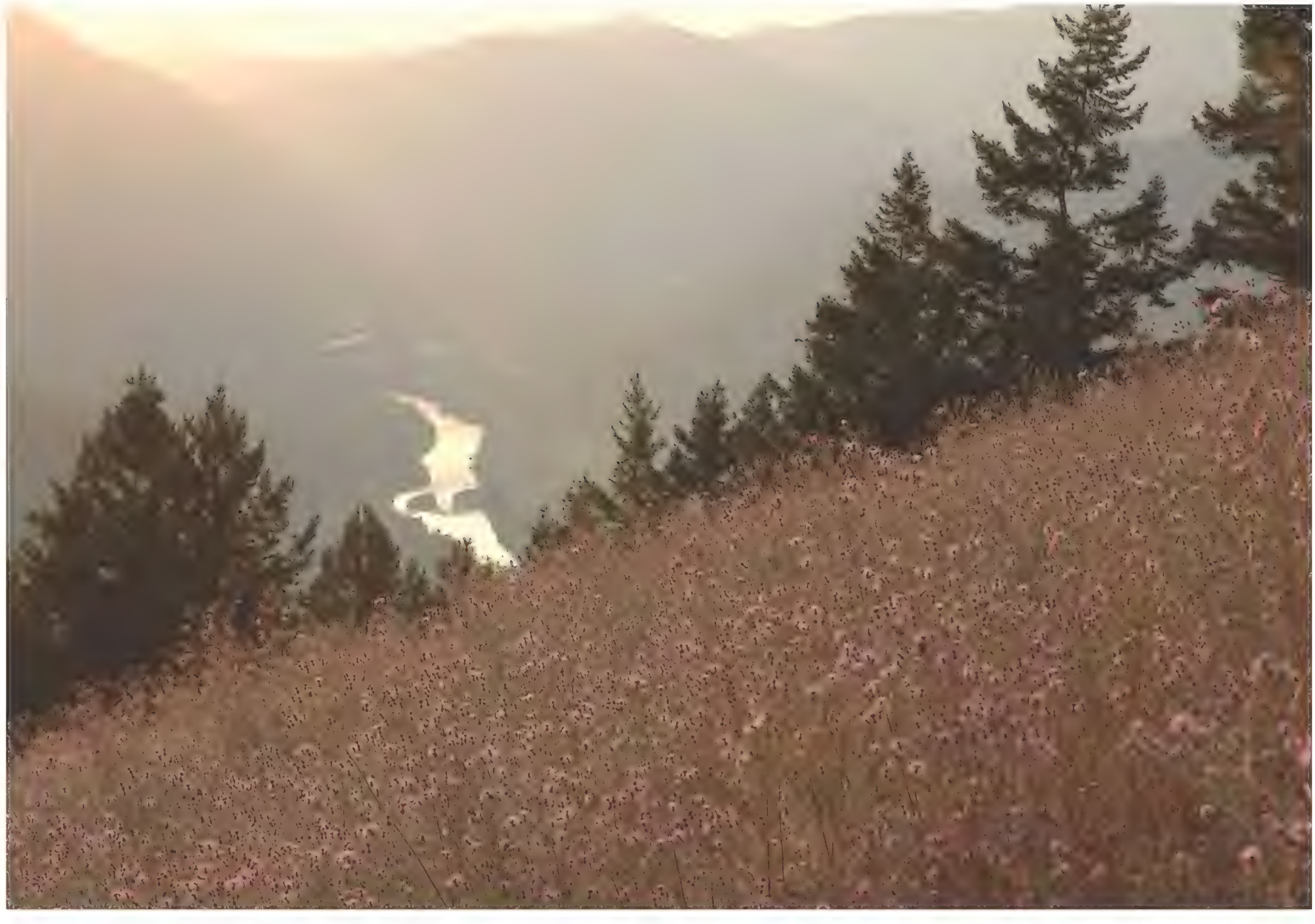
January 2004

Wicked Weed of the West

Spotted knapweed is driving out native plants and destroying rangeland, costing ranchers millions. Can anybody stop this outlaw? — BY JOE ALPER

WAYNE SLAGHT is a rancher. He manages the 10,000-acre Two Creek Ranch in Powell County, Montana, the ranch he grew up on and that his father managed before him. It's in bear country, and he knows every grizzly that passes through this rolling patch of Big Sky country about 50 miles east of Missoula. It's elk country too, and one bitter November day he was pounding postholes in the frozen ground, erecting an eight-foot-high elk fence around a larder of hay that will feed his 800 cattle during the long winter that lies ahead. But the biggest threat to his livelihood doesn't even have teeth. "It's knapweed," he says without hesitation. Uncontrolled, "it could put me out of business in ten years as easily as a grizzly could take down one of my cows."

Spotted knapweed, as the plant is more formally known, is a national menace, a weed of mass destruction. In Montana alone, it covers some 4.5 million acres and costs ranchers more than $40 million annually in herbicide and lost productivity. Native from central Europe to Siberia, spotted knapweed reached North America in the late 19th century. It invades pastureland and renders huge tracts commercially useless, because cattle, horses



MAX AGUILERA HELLWEG; GILES THELEN

Purple-bloomed knapweed (above, in Montana) has overrun many thousands of acres. Top: Dean Pearson (left) is on the case.

"Very few species of plant so completely take over a landscape," says Callaway.

and most other animals turn up their noses at it. The purple-flowered pest, which some nonranchers regard as beautiful, has become so rampant that elk have changed their migration routes to avoid it.

New research points to an unusual reason for the plant's success. Ragan Callaway of the University of Montana in Missoula, who studies how plants interact with one another, and Jorge Vivanco of Colorado State University have found that spotted knapweed conducts chemical warfare on its neighbors—the first comprehensive evidence of an invasive plant using an offensive chemical weapon.

Several thousand foreign plant and animal species, including zebra mussels from Eurasia and Asian long-horned beetles, have colonized the United States. About one in ten turns invasive, or spreads to such a degree that it disrupts existing ecosystems. All told, invasive species cost the nation upwards of $140 billion a year. But few rival spotted knapweed for sheer nastiness. It's "one of the worst invasive plant species in the United States, one that we really don't have much of a handle on yet," says Eric Lane, Colorado's weed coordinator.

SPOTTED KNAPWEED arrived in Victoria, British Columbia, in 1883 either as a contaminant in imported alfalfa or in soil used as ship ballast. Since then, the weed has spread throughout Canada and into almost every state in the United States—and every county in Montana. In late summer and autumn, its one-inch, thistle-like flowers cast a pink-and-lavender hue across dry meadows, pastures, stony hills, roadsides and flood plains. "There are very few species of plant, even invasive ones, that so completely take over a landscape the way that spotted knapweed does," says Callaway. Worse yet, it's tough for native plants to grow back when spotted knapweed has been eliminated. "Many herbicides can kill it easily," Vivanco says. "The real problem," he speculates, "stems from the fact that spotted knapweed releases a chemical that leaves the soil toxic to the native plants it displaces."

In his greenhouse, Ragan Callaway pits spotted knapweed plantings (left) against native Montana grasses (right), trying to outwit the weed's chemical weaponry.

BRIAN SMALE

The idea that plants might engage in chemical warfare against each other is even older than spotted knapweed's residence in North America. In 1832, Swiss botanist Alphos-Louis-Pierre-Pyramus DeCandolle speculated that noxious weeds may exude chemicals from their roots that inhibit the growth of other plants. Allelopathy, as the theory is known, has had its ups and downs among scientists; lately, it has been a hypothesis *non grata*. Still, Callaway and graduate student Wendy Ridenour decided to see if allelopathy could explain spotted knapweed's success in outcompeting native plants.

Ridenour grew spotted knapweed together with Idaho fescue, a native bunch grass, in a clear pot filled with sand, enabling her to measure the growth of the plants' roots. Four days after the plants had germinated, fescue roots sharing a pot with knapweed were half the size of those grown alone or with other, native species. Then, when Ridenour spiked the pots with activated charcoal, which absorbs organic chemicals and would neutralize any poison that the weed released, the fescue roots grew at a nearly normal rate despite sharing quarters with spotted knapweed.

Vivanco took on the search for spotted knapweed's chemical arsenal. He and a researcher in his lab, Harsh Bais, found that within two to three weeks of germinating, spotted knapweed seedlings were already churning out a substance that killed any other plant that they exposed to it. The toxin, they found, is a chemical called (-)-catechin (pronounced minus-CAT-e-kin). Most chemicals occur in one of two forms that mirror each other, like left and right hands. Green tea and cotton plant roots produce the "plus" version of catechin, using it as a potent antibiotic to keep bacteria from nibbling on them.

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One "natural" control, some scientists say, may be nearly as bad as the disease.

But spotted knapweed produces the "minus" form, which almost immediately destroys the roots of other plants. Botanists have long known that plants use chemicals to defend themselves against insects and other predators, says Alastair Fitter, a biologist from the University of York in England. But in this case, the toxin appears to be arming a plant for invasion.

Vivanco and Callaway went on to show that spotted knapweed-infected

To thwart spotted knapweed, scientists have attacked it with parasitic flies. But that tactic can backfire when disease-carrying deer mice feast on fly larvae and proliferate.

North American soils had two to three times more (-)-catechin than soils from the plant's native habitat in Europe, where spotted knapweed grows in harmony with thousands of grasses and other perennials. This suggested to the researchers that either European soil microbes had evolved a way of eliminating (-)-catechin or that American spotted knapweed populations produce more of the toxin. The plant's European neighbors are also less sensitive to the chemical; in contrast to their North American counterparts, the native grasses thrived in (-)-catechin soil.

Recognizing that European plants had perhaps evolved a means of coping with the chemical led the scientists to search for North American plants with the same ability. So far, Callaway and Vivanco's groups have found about ten different species that show resistance. Ridenour is now attempting to breed bluebunch wheatgrass, with the goal of producing a native species for replanting efforts.

Another approach is to control the knapweed with natural predators. Jim Story, an entomologist at Montana State University, has gone to Central and Eastern Europe in search of insects that attack spotted knapweed. Through his efforts, some 13 species of beetles, moths and other bugs have been released on spotted knapweed infestations in North America. His current favorite is a Romanian root-boring weevil known as *Cyphocleonus achates*, a half-inch-long insect that feeds on spotted knapweed leaves and whose larvae feed on the plant's taproot. Story says extensive testing has been done to try to ensure that none of the spotted knapweed predators has a taste for North American plants.

Yet there's reason to believe that the predator strategy will backfire. Callaway, Vivanco and several colleagues have shown in an unpublished greenhouse study that spotted knapweed responds to some insect attacks by increasing its production of (-)-catechin.

A study of one "natural" insect method of controlling knapweed suggests that the cure may be nearly as bad as the disease. Since the early 1970s, European seed head flies have been released to control spotted knapweed throughout the nation. U.S. Forest Service ecologist Dean Pearson has found that deer mice were gorging themselves on fly larvae inside spotted knapweed flowers. The mice were each eating up to 1,200 larvae per night during the hard Montana winter, getting as much as 85 percent of their diet from them. Deer mouse populations doubled and even tripled in spotted knapweed-infested areas.

The problem is that deer mice are carriers of hantavirus. Since 1993, this highly lethal germ has killed more than 100 people, mostly in the Western United States, with a few cases as far away as Maine and Florida. In the spotted knapweed-infested hills surrounding Missoula, where the European seed head fly is ubiquitous, the number of hantavirus-infected deer mice has skyrocketed. And given that the European seed head fly is now being released in the Eastern United States to control spotted knapweed, it raises the possibility that hantavirus could escalate there as well, says Pearson.

For now, Missoula is attempting to control spotted knapweed on its 4,000 acres of parkland and open space with a 300-strong flock of sheep. "Unlike other grazers, sheep love knapweed, and we're finding they do a pretty good job of controlling the infestation," says Marilyn Marler, Missoula's open space weed coordinator.

Would Wayne Slaght ever think about grazing sheep on the Two Creek Ranch? There's a historic animosity between sheep and cattle ranchers, stemming from range wars in the late 1800s over grazing rights. Perhaps, then, it should come as no surprise that the question triggered a raised eyebrow, a thoughtful look and a quiet shake of the head: "I think I'll wait for something better to come along."

Colorado-based JOE ALPER last wrote for the magazine about Neanderthals.

HAL HORWITZ / CORBIS; MILO BURCHAM

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'Tis the Season A bog of floating cranberries looks to photographer Bob Sacha like a "giant red saucer." Sacha strapped himself into an old Huey helicopter to capture this view near Carver, Massachusetts. Workers flood the bogs and manuever connected boards, called booms, to pull the fruit onto conveyor belts and waiting trucks. By the end of 2004, says John Decas, whose family owns this bog, Massachusetts growers will have harvested 1.8 million barrels of fruit. Most is made into juices, sauces and other staples of the holidays. —*HELEN STARKWEATHER*

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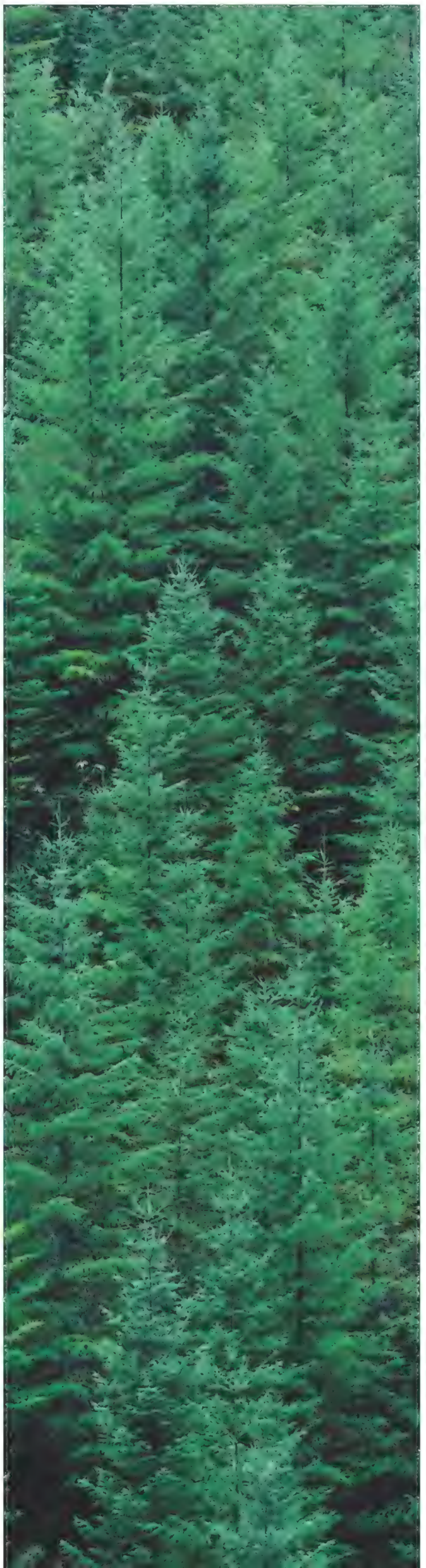

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Hunting Buffalo at 38 Below

As the mercury plummets, the bivouacking corps hunts with Mandan Indians and celebrates Christmas

With the weather turning colder, members of the expedition hunkered down for a long winter's night at Fort Mandan, in present-day North Dakota. By mid-December 1804, it was apparent to everyone that they were in for months of bitter cold, unlike anything most of them had experienced in Virginia, Kentucky or even New England.

December 2, 1804 [Sgt. Patrick Gass]
The 3rd 4th and 5th were moderate and we carried on the work; but the 6th was so cold and stormy, we could do nothing. In the night the river froze over, and in the morning was covered with solid ice an inch and an half thick.

December 7 [Gass]
A clear cold morning. At 9 o'clock, the Big-white head chief, of the first village of the Mandans, came to our garrison and told us that the buffaloe were in the prairie coming into the bottom. Captain Lewis and eleven more of us went out immediately, and saw the prairie covered with buffaloe and the Indians on horseback killing them. They killed 30 or 40 and we killed eleven of them.

December 7 [Capt. William Clark]
Cap Lewis with a party went out & Killed 11 [buffalo] three in view of our fort, The weather so excesive Cold & wolves plenty, we only saved 5 of them.

"The head chief of the Mandans came to our garrison in Great haste on horse back & Informed us that the Buffalow were comming towards the River in large Gangs."

December 12 [Clark]
The Thormometer at Sun rise Stood at 38° below 0, moderated untill 6 oClock at which time it began to get Colder.

December 24 [Gass]
Some snow fell this morning; about 10 it cleared up, and the weather became pleasant. This evening we finished our fortification. Flour, dried apples, pepper and other articles were distributed in the different messes to enable them to celebrate Christmas in a proper and social manner.

December 25 [Sgt. John Ordway]
We fired the Swivels at day break & each man fired one round. our officers Gave the party a drink of Taffee [probably an inferior grade of rum made from molasses]. we had the Best to eat that could be had, & continued firing dancing & frolicking dureing the whole day. the Savages did not Trouble us as we had requested them not to come as it was a Great medician day with us. we enjoyed a merry cristmas dureing the day & evening untill nine oClock—all in peace & quietness.

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IF ANYONE CAN UNRAVEL AN ANCIENT MYSTERY, RENOWNED ARCHAEOLOGIST KENT WEEKS CAN.

World-renowned Egyptologist Kent Weeks made international headlines in 1995 when he uncovered the entrance to KV5, a massive "lost tomb" in Egypt's Valley of the Kings. That coup is considered to be on a shortlist of the 20th century's most important discoveries in Egypt — second only to finding King Tut. But that groundbreaking achievement was only the beginning. Most recently, Weeks has found a skull believed to be of the first-born son of the legendary King Rameses II, the Pharaoh traditionally identified with the biblical story of Moses and the Book of Exodus. With potential epic implications, the skull could be a link to the tenth plague described in Exodus when God took the lives of the firstborn sons of Egypt.

A CSI FOR B.C.

Now, a Discovery Channel documentary, "Rameses: Wrath of God or Man?," tracks this suspenseful cold-case investigation to determine if these scientists do indeed have the crown prince's skull. Discovery Channel and Atlantic Productions ("The Assassination of King Tut") join forces with Weeks and his team to apply futuristic technology — 3-D scans, craniometrics and digital facial reconstructions — to the skull and put it through detailed forensic tests. Throughout the process, historians and biblical scholars weigh in to broaden the investigation and determine the skull's possible revelations about the Exodus, a pivotal event in the Muslim, Christian and Jewish faiths.

THE MYSTERY IS SOLVED... AND CONTINUES

Building upon his vast experience at the Metropolitan Museum of Art's Egyptian Department and the University of California at Berkeley, Kent Weeks initiated the Theban Mapping Project in 1978 to create a comprehensive survey of the tombs and monuments of Egypt's West Bank at Luxor. The prestigious project, still in progress today, led to his immersion in the formidable task of excavating KV5 in the 1990s. Drawing from his diaries and painstaking work, he recounts his initial discovery of KV5 in his compelling 1998 book *The Lost Tomb*. The outcome of his latest investigation, featured in "Rameses: Wrath of God or Man?," will surely inspire more headlines, but it's Weeks' impressive reputation that has propelled him to the top of his field. His expertise is in high demand: The Egyptian government has asked him to develop a master preservation plan for the Valley of the Kings so that it won't remain a mystery to future generations. For more information on Kent Weeks and his work, visit www.discovery.com. And for Weeks' latest mission accomplished, watch Discovery Channel's "Rameses: Wrath of God or Man?" Sunday, December 5, 9-11 P.M. (ET/PT).

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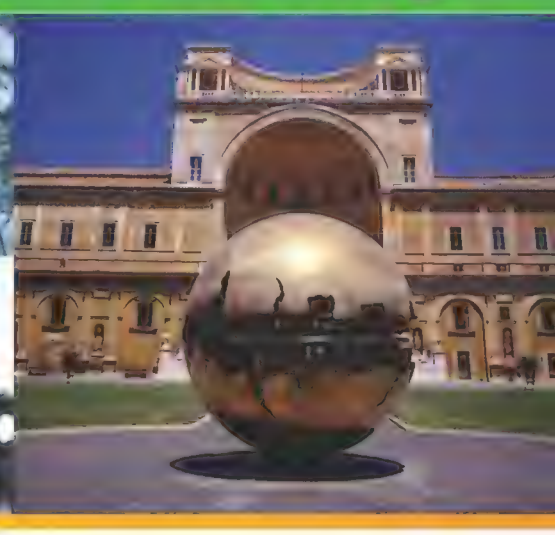

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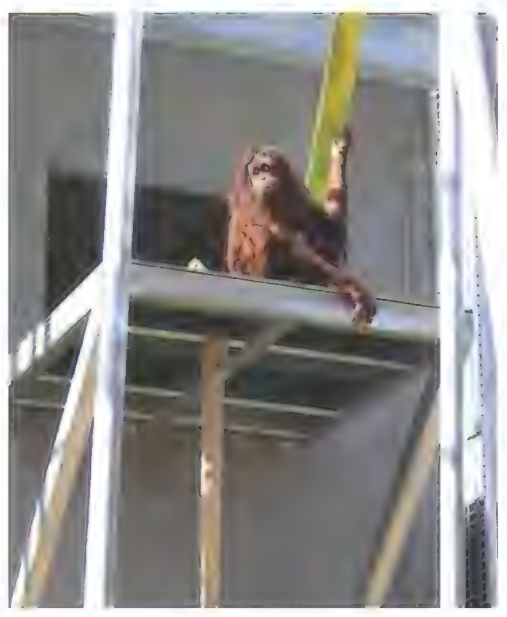
Celebrity Apes Make a Move

Two computer-using orangutans from the National Zoo are the first residents of a new Iowa facility devoted to the study of primate intelligence

ONE DAY THIS PAST SEPTEMBER, Azy and Indah, stars of the Orangutan Language Project at the Smithsonian Institution's National Zoo, were put into two windowed enclosures and driven to Washington Dulles International Airport, where they were loaded onto a chartered 737 jet. Once aloft, biologist Robert Shumaker, who has cared for the apes for more than two decades, opened the crate windows and gave his simian fellow passengers chewing gum, fruit juice and soothing words.

Two hours later, Azy and Indah were scampering around the Great Ape Trust of Iowa, a 230-acre research and conservation center being built near Des Moines. The facility, scheduled to accommodate dozens of orangutans, chimpanzees, bonobos and gorillas, will be the first North American institution for the study of cognitive skills in all four of the great ape species. Azy, 27, and Indah, 24, were born at the National Zoo, and Shumaker, who relocated to Iowa a year ago, was worried the move



JOCELYN AUGUSTINO; STEVE POPE

Indah (above, at the Zoo, and right, in Iowa) and Azy have been together for decades.

would upset them. Not to worry. "They mostly wanted to see the inside of the airplane," he says.

The founder of the center, which is situated near the Des Moines River amid forest and lakes, is Iowa philanthropist Ted Townsend, 56, heir to a meat-processing fortune. He recruited Shumaker and other primatologists by promising not only extraordinary facilities for the animals, including lakeside views for the orangutans complete with a three-story tower to satisfy the arboreal primate's climbing urges, but the unusual chance to work with other experts and ape species. "I wasn't anxious to leave" the Zoo, Shumaker says. "But the opportunity to do comparative research was an enormous attraction. This had never happened before: putting so many top ape researchers and all these types of apes together in one place."

Among the others joining the center are conservationist Benjamin Beck, a former associate director of the National Zoo; chimpanzee psychologist Duane Rumbaugh, of Georgia State University; and primatologist Sue Savage-Rumbaugh, also of Georgia State. She's renowned for having taught bonobos to communicate with printed symbols, and eight of her prize pupils are slated to join her in Iowa next spring.

Shumaker (feeding Azy in Iowa just after arrival) says the trip was a breeze.

For their part, Azy and Indah themselves have achieved a measure of fame as communicators. At the National Zoo, some 200,000 visitors over the past decade watched Shumaker give the orangs language and even computer lessons in the Think Tank exhibition. Using their four-foot-wide touch-screen computer, the orangs could tell Shumaker to open a container or could ask for an apple.

Despite the orangs' popularity, it made sense for the animals to move with Shumaker, says Lisa M. Stevens, an assistant curator at the Zoo. With a long-term learning project, she adds, the animals become emotionally dependent on the researcher. "It would not have been humane," she says, "to take that from them." Also, relocating Azy and Indah makes room at the Zoo for biologists there to breed orangutans. "This was a grand opportunity to contribute to reproduction and more cognitive research," Stevens says. "But I miss them."

Meanwhile, word is that Azy and Indah enjoy their new digs. One fall day, the animals were in the outdoor enclosure when they spied a bald eagle fishing in the nearby lake. "They were transfixed," Shumaker says. "This is the kind of enrichment we can give them here. They can look at nature in context." —*CLAUDIA DREIFUS*

FROM THE ATTIC

STAR BRIGHT "Now that's a snowball," said Smithsonian astronomer Fred Lawrence Whipple when he first saw the icy chunk, above, at the Smithsonian Astrophysical Observatory in Cambridge, Massachusetts, in February 1986. It was part of a stunt arranged by photographer Jonathan Blair, who was making a portrait of Whipple, perhaps best known for his 1949 theory that comets were "dirty snowballs," not clumps of sand or rock. Whipple, who served nearly 50 years at the observatory, including 22 years as its director, died August 29 at age 97. He is survived by his wife, Babette, and three adult children. A star of 20th-century astronomy, Whipple created a worldwide satellite-tracking program after the launch of *Sputnik*, anticipated the U.S. manned spaceflight program in the early 1950s, and pioneered the use of the innovative Multiple-Mirror Telescope in 1979. In 1986, close-up photographs of Halley's comet confirmed his snowball theory. His legacy is enshrined at the Fred Lawrence Whipple Observatory on Mount Hopkins in Arizona and also in a 1946 invention, the Whipple shield, which protects spacecraft from cosmic debris. —*BETH PY-LIEBERMAN*

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Swentzell (at installation of her museum work) says she sculpts "emotions."

At the American Indian Museum, a sculptor reaches out to the hemisphere's indigenous peoples

ON THE NATIONAL MUSEUM of the American Indian's opening day this past September, a 6-year-old girl running through the hallway outside the ground-floor theater suddenly stopped in front of a dramatic mural-like installation of six bronze dancers. She excitedly reached up and took hold of one of the outsize hands. Later, a woman walked the length of the artwork, trailing her hand along the burnished arms, legs and flanks. In many ways, it appears the sculpture begs to be touched.

Entitled *For Life in All Directions*, the installation—two Pueblo rain dancers perform outside a circle of four figures, each with a hand stretched toward one of the cardinal directions—is by Roxanne Swentzell, a self-described "sculptor of human emotions," who is a member of the Santa Clara Pueblo in New Mexico.

Swentzell, 42, says she was worried when assistant director Bruce Bernstein commissioned her last year to create a work encompassing the museum's vast constituency—the hemisphere's hundreds of indigenous cultures. "If I'm just going to talk about myself, that's easy, or if it's just about my tribe, that's easy," she says. "But about the tribes of the Americas? Oh, my."

Swentzell began sculpting as a child. She had a severe speech impediment and made tiny figures in clay as an outlet for her frustrations and emotions. Artistically, she was following in the footsteps of her mother, Rina Swentzell, a Santa Clara potter. By high school Roxanne Swentzell's clay sculptures—rotund whimsical figures expressing anger, joy, sadness and love—were attracting buyers. Seven years ago, she began to have her pieces cast in bronze to keep up with demand.

Swentzell went to the island of Kauai to create the clay models used in *For Life in All Directions*. The dense, humid air kept the clay moist over the half-year it took to complete the pieces. She shipped the molds to a foundry in Oklahoma for bronze casting. It wasn't until installation day at the museum that Swentzell finally saw the finished work in its entirety. How does she feel about visitors being drawn to touch the figures? "That makes me very happy." —*ALICIA AULT*

WHO'S COUNTING?

1

GALERA, A TOOL USED IN THE 19TH CENTURY TO POLISH THE MARBLE CHIPS IN A TERRAZZO FLOOR, HAS COME TO THE NATIONAL MUSEUM OF AMERICAN HISTORY. RETIRED TERRAZZO MECHANIC ATTILIO FRANCESCHINA, 77 (RIGHT), OF SEATTLE, DONATED THE GALERA AFTER READING IN OUR FEBRUARY 2003 ISSUE THAT THE SMITHSONIAN INSTITUTION WANTED ONE FOR ITS HAND TOOL COLLECTION.

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Herd on the Street

In Anchorage, Alaska, you never know when a moose will show up on your doorstep

BY JIM DOHERTY

THE FIRST TIME I ever laid eyes on a moose, I was lucky I didn't get the snot kicked out of me. My wife and I were finishing up a mountain hike in Wyoming late one afternoon when we rounded a corner and came face to face with a big bull planted squarely in the middle of the trail. I was jittery about getting back to our car before dark, but the moose refused to budge. I hollered and clapped my hands. When that didn't work, I tried to run him off. Then I heaved a chunk of wood at him. Finally, I gave up, and with some difficulty, we bushwhacked around him. Next day, an old-timer in Jackson Hole told me that although a moose may look like a dopey cartoon character, "it can stomp you into the ground quicker than you can say 'Bullwinkle!'"

Now fast-forward 20 years to Anchorage, Alaska, where any number of people have learned that lesson the hard way. Michael Vogel, a 48-year-old chemist and avid outdoorsman, is one of them. Jogging near a local park last year, Vogel encountered a cow moose and her calf. Since they didn't act perturbed, he decided to keep going. Suddenly, the cow charged, trampling him so severely he almost lost an eye and

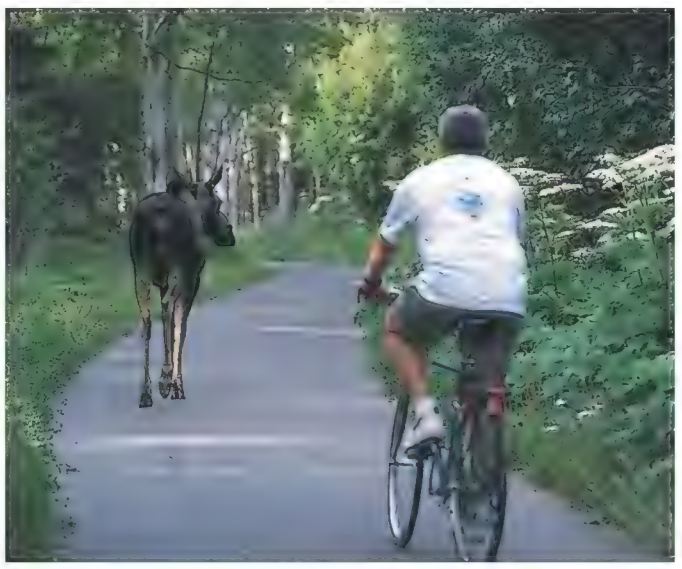
The 300 or so moose that stay in Anchorage year-round are joined by hundreds more in winter. "The animals have nowhere else to go except where people live," says Page Spencer.

had to have part of his face rebuilt. "I wanted that animal killed," Vogel told me when we talked in Anchorage last fall, "but the authorities did nothing. They don't understand this is a city, not a wildlife theme park."

Actually, it's both. Coping with moose is a major theme of life in this booming little metropolis at the head of the picturesque Cook Inlet. Anchorage is stuck with more moose—well over 1,000 at one point earlier this year—than it can handle. Strolling around town, I saw them everywhere—bedded down next to a sewage-treatment plant near the Ted Stevens Anchorage International Airport, lumbering across four lanes of rush-hour traffic on Minnesota Drive, silhouetted atop a hill in sprawling Kincaid Park. One night, I discovered a female browsing with her two calves in the yard of a house on 15th Avenue not far from City Hall. The mother's bony rump was even with my eyes and her head looked higher than the rim of a basketball hoop. The moose acted like they owned the place. When one calf's ears snagged a string of tree lights, the leggy youngster nonchalantly tossed them off without missing a bite.

four subspecies found in North America, is hard to miss. In the wild, though, you can easily overlook a 1,600-pound bull carrying a showy rack of antlers six feet wide. The moose's dark coloration blends into almost any background, and the animal makes itself even more inconspicuous by not moving around much. Hiking in the Nancy Lake area north of Anchorage one day, my companions and I failed to notice a statuesque young bull standing quietly 100 feet away until it turned its head.

When these phlegmatic ungulates do move, it is usually with a regal deliberation the Alaskan writer Sherry Simpson calls "the strange grace of moose." But they can explode into action if they have to. "You see this best when bulls fight out in the open during the fall rut," says Vic Van Ballenberghe, a longtime moose researcher in Denali National Park. "I watched one terrific battle when the two of them went at each other like Ali and Frazier. The violence was unbelievable. Antlers were crashing, ten-foot-tall trees were getting knocked over. When one bull finally got the other one down, he kept goring him until the hair flew. You could have filled a



Moose are attracted to roads by such fast foods as median-strip vegetation and salt-slathered pavement; last winter some 200 moose were killed in collisions around Anchorage. Nearly a third of the residents say they've been charged by one. "We groom ski trails and plow roads, making it easy for them to travel," says one researcher. "Who can blame them if they decide to stick around?"

Anchorage is by no means the only municipality in Alaska with a multitude of moose, but it's the biggest (pop. 271,000) and by far the most urbanized. "It has reached the point here where confrontations and other problems can't be avoided," says Page Spencer, an ecologist with the National Park Service. "Conflicts are inevitable." According to Rick Sinnott, an amiable, soft-spoken wildlife biologist with the Alaska Department of Fish and Game (ADFG), there might be fewer confrontations if people weren't so careless: "Dog owners let their pets run loose, skiers get too close, kids throw snowballs. People don't use common sense around moose."

In a man-made environment of straight lines and artificial colors, an Alaskan moose, the most impressive of the shopping bag with all the hair on the ground."

This largest member of the deer family crossed into Alaska from Siberia over the Bering Strait land bridge toward the conclusion of the last ice age, perhaps as recently as 11,000 to 14,000 years ago. By the end of the 1800s, habitat destruction and hunting had all but exterminated moose throughout much of their prehistoric range. Today, the combined U.S. and Canadian population is around one million, including approximately 150,000 in Alaska. Thanks to a fortuitous combination of circumstances—from controlled hunting and the demise of natural predators to successful reintroductions and habitat rejuvenation—many moose populations are once again thriving from New England and the upper Midwest to Wyoming and Montana.

To the indigenous people of the Far North, moose meant meat, and more. The hump of the nose, moosehead soup, pure moose grease, and flesh raw, boiled or broiled—all fig-

Former SMITHSONIAN *senior editor* JIM DOHERTY *lives in Wisconsin, where he gardens, chops firewood and keeps wildlife at bay.*

DARON DEAN / ANCHORAGE DAILY NEWS; VIC VAN BALLENBERGHE; BOB HALLINEN / ANCHORAGE DAILY NEWS; PP. 54, 55 PAUL A. SOUDERS / CORBIS

ured prominently in the Native diet. One researcher has calculated that a band of 100 Indians required 142.4 moose a year to survive. Moose hide was used for clothing, boat and lodge coverings, sinew for thread, and bones for tools. Some tribes believed moose had medicinal powers. "The savages . . . are cured by the hoof of its left hind leg," wrote one early chronicler. "In this hoof there is certain marvelous and manifold virtue."

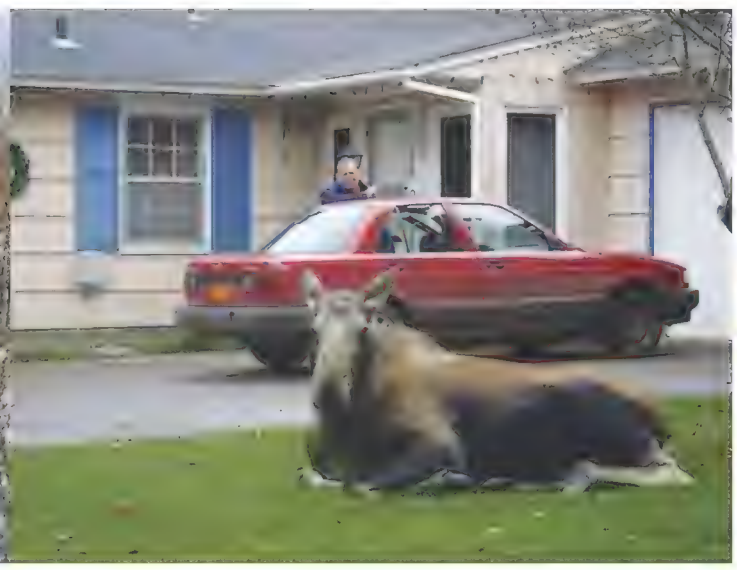
The moose was a shrewd and dangerous quarry. A black-and-white photograph taken during the early part of the last century shows the grisly aftermath of a doubly fatal encounter: bleached antlers and the skeleton of a bull moose lay next to a human skull and two upturned moccasins. More often than not, the shoe ended up on the other foot, so to speak, with the hunter rejoicing over his fallen prey. But another vintage photograph suggests that on at least one occasion, even a dead moose could exact retribution. The photograph depicts an individual identified only as an Alaskan "tenderfoot," who said he slept inside a gutted moose carcass to keep warm one cold night. By the time he woke up, the carcass had frozen stiff, and the tenderfoot was trapped in it, he claimed, until a pack of wolves happened along and chewed him out.

Today moose remain an important "subsistence resource" for Natives and others still living in the Alaskan bush, and hunting them for sport has become a big business. Roughly 7,000 moose, mostly bulls, are "harvested" each year for their prized meat and trophy antlers. "Wolves and bears get 20 times as many," says Sinnott. "But most of those are calves." Bears go through moose calves the way geese gobble up grass. Van Ballenberghe says that a grizzly he kept track of in Denali some years ago killed three sets of newborn twins in two weeks. Even though Alaska's predators and prey have been coexisting for millennia, hunters there are so concerned about the impact of bears and wolves on moose populations that last year the Alaska Board of Game approved what Van Ballenberghe and others decry as a "quasi-scientific" campaign to control predators. So far, 123 bears have been captured and relocated, and 142 wolves have been killed.

Primarily associated with northern spruce, fir and pine forests, moose are equally at home on tundra and in mountains—basically, wherever they can find patches of willow, birch, aspen and other nourishing forage. ("Moose" may derive from an Algonquian Indian word, *moosu*, meaning, roughly, "bark stripper.") Thanks to their long legs, they can negotiate deep snow and run as fast as a horse across terrain so rough people can barely clamber over it. In warm weather, they like to cool off in ponds and lakes, submerging now and then to feed on aquatic vegetation. Moose are powerful swimmers, an attribute that does not always work in their favor. In 1992, two Alaskan fishermen saw a pod of killer whales attack a pair of moose swimming from an offshore island to the mainland. Amid "a lot of splashing," one moose was torn apart; the other took refuge in a bed of kelp the whales couldn't penetrate, only to drown there after they left.

Predation, hunting and weather all affect moose numbers, but the critical factor is suitable habitat. In 1915, Anchorage was founded as a railroad town in a bowl-like configuration of brushy lowland and wooded slopes where moose traditionally sought shelter in the winter. During World War II, Anchorage became an important military outpost. The discovery of oil on the nearby Kenai Peninsula in 1957 and the construction of an 800-mile-long oil pipeline from the North Slope to Valdez in the 1970s triggered a statewide boom that transformed the city. Today it bristles with high-rise buildings and bustles with shopping centers. As for that important moose wintering habitat, most of it has disappeared and the rest has been seriously compromised. Now new houses are relentlessly climbing the hillsides behind Anchorage toward moose summer range as well. "The animals have nowhere else to go except where people live," the National Park Service's Spencer told me.

These days up to about 300 moose stay within city lim-



"People don't use common sense around moose," says Alaska Department of Fish and Game biologist Rick Sinnott. "Dog owners let their pets run loose, skiers get too close, kids throw snowballs." He tells Anchorage residents how to read moose body language: "When the ears go back, the neck hair goes up and the lip-licking starts, it's time to back off and look for an escape route."

CALVIN W. HALL / ALASKASTOCK; BILL ROTH / ANCHORAGE DAILY NEWS; ERIK HILL / ANCHORAGE DAILY NEWS

its year-round. After the first snowfalls, they're joined by hundreds more streaming down from the Chugach Mountains to the east. During a hard winter, many starve. After overbrowsing vegetation in Anchorage's parks (much of it malnourishing to begin with), moose hang around residential neighborhoods and head downtown, where they sometimes "attack" Piper Cubs parked at a bush-plane airport, shredding tail assemblies and damaging wings.

Most residents say they enjoy watching moose and like having them around. "They're icons," Rick Sinnott told me. "They remind us we live on the edge of a great wilderness. People appreciate that." But people don't necessarily appreciate ruined bushes and flower beds, trashed hammocks, injured pets, looted garbage cans and scary encounters. "We're constantly dealing with nuisance moose," grumbled one exasperated homeowner I talked to in a new east-side development. He and like-minded others—it's hard to tell how many—want the interlopers to vamoose. "They've lost their fear of man," Vogel said, "and once that happens, it's only a matter of time before somebody gets killed."

Two Anchorage residents already have been killed. A 66-year-old woman was trampled to death in her backyard near Jewel Lake on the city's west side in 1993. An older man died from massive injuries after he was stomped on the University of Alaska's Anchorage campus in 1995. Last year, 11-year-old Hannah Strobbe narrowly escaped becoming the city's third aggressive-moose fatality when an alarmed cow with a calf trounced her while she was playing near her home. "If she had been hit solid, she would have been killed," said her father, Steve, a construction worker, when he and Hannah showed me the place where the attack happened. "As it was, the moose nearly tore off one ear, fractured her skull and shattered her collarbone."

Run-ins aren't unusual. Nearly a third of residents responding to a survey conducted in Anchorage several years ago for the ADFG said they had been charged by a moose in their neighborhood or on a trail. Moose are a hazard on roads too. They feed along median strips and shoulders; they lick salt off the pavement. The more city-wise among them look both ways before crossing a street, but others aren't smart enough, or don't live long enough, to learn. In the 2002-2003 winter season, 143 moose were killed in collisions in the Anchorage area; a 13-year-old boy died after one such accident, and property damage and other costs exceeded $2.5 million. Last winter the moose toll rose to 200.

Anywhere else, this kind of notoriety might get the moose declared Public Enemy Number One, but not in outdoors-crazy, wildlife-loving Anchorage, where it seems hardly a day goes by without one or more creature-features prominently displayed on the front page of the morning paper. "I'd like to think it's because people realize how much trouble moose are in here," Sinnott said. "Look, we go out and plant flowers and bushes they like to eat," said Van Ballenberghe, who is semi-retired and lives in town. "We groom ski trails and plow roads, making it easy for them to travel. Who can blame them if they decide to stick around?"

Josephine Didiano lives in Palmer, a 45-minute drive from Anchorage. She didn't blame the moose that jumped into her house through a window one morning last year while she was upstairs getting ready to go to work. By the time three squad cars arrived, the frantic yearling had caused $7,000 worth of damage. "I love moose," Didiano said, walking me through the mess. "I felt terrible when this one had to be shot." Kathleen Loughlin, a 42-year-old ski instructor, felt the same way after she was injured by a moose last year and saw one of the investigating policemen carrying a rifle. Loughlin had barged

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By S.J. KOMARNITSKY
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Stomped by a moose
Animal attacks boys, leaves 7-year-old with a broken leg
Motorist dies after crash with moose

Last year, 11-year-old Hannah Strobbe narrowly escaped becoming the city's third moose fatality when a cow trounced her.

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Each year, Alaska wildlife workers (Rick Sinnott, right, and co-worker Jessy Coltrane help free a tranquilized young bull from a hammock) answer several thousand requests for help from harried homeowners, the police and local businesses. "They're icons," biologist Sinnott says of Anchorage's moose. "They remind us we live on the edge of a great wilderness. People appreciate that."

FRAN DURNER / ANCHORAGE DAILY NEWS

into a female with two calves while bicycling alone on a hilly Anchorage trail. She ended up on the ground, and the mother "tapped" her arm, breaking it. "I understood why she did that," Loughlin told me. "I didn't want them to shoot her." As it turned out, they didn't.

Part of Sinnott's job is educating the public about moose and other wildlife, so accidents are less likely to happen. "It's pretty simple—don't get close, don't harass, don't confront, keep pets and garbage under control, drive cautiously." He tells people how to read moose body language: "When the ears go back, the neck hair goes up and the lip-licking starts, it's time to back off and look for an escape route." Basically, Sinnott's aim is to reassure, not scare. "People will feel more comfortable about moose if they know how to act around them," he says.

Another part of his job is rescuing animals in distress. Each year, he and his co-worker, Jessy Coltrane, answer several thousand calls for help—everything from nuisance grizzlies and stranded calves to bulls entangled in swing sets or hammocks—from homeowners, the police and local businesses. The busiest times of year are autumn, when rutting bulls act aggressive and moose start migrating into town, and the spring calving season, when mothers get separated from their young and bears start picking off as many newborns as they can find. "When I get on the scene and hear bones crunching nearby," Sinnott said, "I usually tell the caller I'll be back the next day, and leave."

One noon-hour after Sinnott and I met for a sandwich at a busy midtown deli, his cellphone went off six times. Two were bear calls; the others involved moose. Sinnott listened patiently as one worried housewife told him about a mother and calf hanging around her neighborhood. He scrawled her phone number on his palm with a ballpoint pen and promised to follow up. That morning, he'd put down a moose that

had been hit by a car. He has to kill around 20 of the animals each year because they're injured or persistently belligerent. "When somebody provokes a moose to charge," he explained, "it's usually the moose that pays the price. Most charges you hear about are false charges. Basically, moose are not trying to kill us. They just end up in jams they don't know how to get out of."

Sinnott never knows what kind of a jam he's going to get into, either. He may have to manhandle a 100-pound calf, or pin it down with a dip net, while the mother works herself into a frenzy nearby. He may have to sedate a panicky bull before he can disentangle it from a volleyball net. Last fall, he received a report about a calf that had "a stick jammed in its eye." When he got to the house, he found a young moose lying near its mother on the lawn. Examining the 400-pound calf through a pair of binoculars, he saw a set of wind chimes dangling from one ear. The calf rotated its ears and the chimes tinkled, but Sinnott couldn't make out how they were attached. After he had approached to within several feet of the calf, the ever-watchful cow was distracted by something in the woods and glanced away. Sinnott lunged and grabbed the chimes. By the time the mother leaped to her feet, he had made good his escape, leaving the calf, as he put it, "unfazed and unaccessorized."

After a young moose crashed through the roof of an Anchorage shed, rescuers used tranquilizers and a backhoe to remove it.

Everybody who works with moose tells war stories. Page Spencer has one she calls "The Day Dad Set the Moose on Fire." Back in the 1950s, when Dave Spencer was running the Kenai National Moose Range (now the Kenai National Wildlife Refuge), he got a call about a moose that was charging children at a nearby elementary school playground. After sizing up the situation, he decided to scare off the intruder by throwing a firecracker at it, but his aim was too good. Sparks from the firecracker landed on top of the moose, singeing its hair. Instead of running away, the smoldering giant chased Spencer all over the playground and across the street, where a woman who had been watching flung open her door and let him in.

Larry Lewis, a wildlife technician with the ADFG in Soldotna, a rapidly growing community (pop. 4,000) adjacent to the Kenai refuge, went to a house not long ago to see about a yearling moose that had a plastic bag stuck on its nose. While he stood outside, gingerly trying to hook the bag with a fishing rod and a coat hanger, the flustered housewife ran around her living room exclaiming, "I can't believe this is happening! I can't believe this is happening!" After nothing else worked, Lewis finally leapt onto the moose's back, yanked off the bag and dashed into the garage with his patient in hot pursuit.

At the University of Alaska's Anchorage campus, moose are introduced to human food by students who should know better. Not long ago, one dormitory resident reportedly handed over an entire roast to a moose he had induced to stick its head in his window. "We already have enough moose hanging around here," said campus police chief Dale Pittman. "We don't want to attract even more by feeding them." Pittman's dispatcher told me he had received 54 "moose calls" in the four months prior to my visit. "On a typical weekday, we have 12,000 students here," Pittman said, "and there are a number of buildings where moose can get hemmed in. We don't want *that* to happen again."

Pittman was referring to the second of the two Anchorage fatalities attributed to moose, the 1995 stomping of 71-year-old Myong Chin Ra, an incident that shocked the entire city after a videotape of it was broadcast on a TV news program. That day, a moose and her calf had been holed up for some time in a corner of the university's sports complex, next to the main entrance and an adjacent day-care center. By some accounts, students and others had been pelting the animals with snowballs in a futile attempt to make them go away, which may have set the already nervous mother even more on edge. A man with a video camera happened by just as Ra, carrying a bag and wearing a knit hat and a gray coat, hurried toward the entrance, and the cornered moose. Pittman played the famous tape to show me what happened next. It was a chilling demonstration of how lightning-fast and lethal a moose can be. In the wink of an eye, the cow bowled Ra over and within a few seconds, using all four feet, kicked his head and upper body 25 to 30 times. Ra died in a hospital a short while later.

But what impresses Terry Bowyer about moose is their tolerance, not their temper. A wildlife-ecology professor and researcher at the University of Alaska's Fairbanks campus when we talked last fall (he has since moved to Idaho State University in Pocatello), Bowyer told me he never ceases to be amazed at how much harassment a moose will endure. "It happens over and over that skiers who encounter a moose lying on a cross-country trail will try to make him move rather than just ski around." What they don't understand, he said, is that in winter moose live off fat they stored up in the summer. "Walking through deep snow is a huge drain on

BOB HALLINEN / *ANCHORAGE DAILY NEWS*

their energy. Movement is death for them. That's why they don't want to get off a groomed ski trail."

Basically, Bowyer said, moose are just big teddy bears. "They're the least aggressive member of the deer family." But once a moose does get mad, it stays mad. Bowyer himself moved too close to a cow he had been observing one day and ended up playing ring-around-a-tree with her for 20 minutes. At one point, his binoculars strap got hung up on a branch and he nearly strangled. "When that moose finally left, I just laid down on the ground and panted. But it wasn't her fault. It was *mine*."

Notwithstanding the efforts of Bowyer, Rick Sinnott and others to educate the public about moose behavior, the pot continues to boil over. So far this year at least two people have died in moose-vehicle collisions in the greater Anchorage area and farther north. A 7-year-old Anchorage boy suffered a broken leg last spring when a moose he and some neighborhood friends had been teasing went after him. But by then the city's "moose problem" had taken a new turn.

After his horrific encounter last year, Michael Vogel made up his mind he was going to be ready if he ran into a moose again, which, in March, he did. He was cross-country skiing with his dog when he happened across a female bedded down on the same trail. This time he reached into his fanny pack, hauled out a .44-caliber Smith & Wesson revolver and, after the moose stood up and began coming toward him, shot at it twice. Rick Sinnott tracked the wounded animal down later that night and killed her with his shotgun. Vogel pleaded self-defense. Sinnott wasn't buying it. "He could have turned back," Sinnott said, "or he could have gone around her." No charges were filed against Vogel.

Today, the population of roughly 150,000 moose in Alaska is stable, but around the Anchorage area the animals are thriving.

RON LEVY

It remains to be seen whether others will take the law into their own hands, but no one doubts encounters will continue to occur. "Having moose here carries risks and benefits," says Van Ballenberghe. "We can't reduce the risks to zero. What's important is not that there are problems, but that there aren't more." Testifying last spring at a hearing in Juneau, the state capital, Linda Donegan emphasized that she and her children do not feel threatened by the moose they see on the streets of their Anchorage neighborhood. "I'm happy to take that risk for the privilege of living with these animals," she said.

But other residents want something done now. Vogel and Steve Strobbe speak for those who favor a resumption of hunting in the Anchorage area. The last hunt, in 1983, turned into a public-relations fiasco, due partly to sensational media coverage, leaving many in the city gun-shy about another one. "We've discussed hunts ad infinitum," says Sinnott. "The city doesn't want hunters in parks, and I don't think it's a good idea to hunt moose in neighborhoods. In addition to the obvious safety issue, you can't hunt on private property without permission, and a moose seldom drops in its tracks."

Gary Olson, who heads up a two-year-old organization called the Alaska Moose Federation, advocates a "transplant" program that would relocate hundreds of moose out of Anchorage and into the wild, a notion some dismiss as "wacko." Olson is well-connected politically, and earlier this year he and supporters packed enough clout to help persuade state legislators to pass a "nuisance moose" bill that authorizes transplants by private groups. Most moose experts regard the likelihood of such an effort succeeding as iffy at best. According to Jeff Hughes, formerly an ADFG regional supervisor in Anchorage, "the track record for moving animals like that is really poor."

In a region that prides itself as the last redoubt of rugged individualism, limits on development are widely regarded as unpatriotic if not downright perverse, but some moose-lovers are arguing for nothing less. They reason that habitat preservation, special zoning measures and moose-friendly landscaping can enable man and beast to live together more harmoniously. Anchorage mayor Mark Begich told me the city is moving in that direction. "We've incorporated moose migration paths into our land-use planning and have set aside large tracts of open space. We're holding hearings now on proposals to manage growth, and we're emphasizing mixed land use, which includes large-parcel residential development as well as dense development in town centers. The more progressive people in the real estate business see this as a plus, but there's still a segment opposed to zoning and limits, so it's controversial."

Moose grow on you. During my last full day in Anchorage, I drove up to the foothills of the Chugach Mountains and took a long walk. Everywhere I looked across the tawny landscape, I could see moose grazing, singly and in small groups. Solitary bulls with magnificent racks resembled toys far off in the distance. It was hard to believe those same animals would soon be descending out of that glorious wild country into a noisy city wrapped in the darkness of a long sub-Arctic winter. I couldn't help wondering what would happen to them when they got there.

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FREE AT LAST

A NEW MUSEUM CELEBRATES THE UNDERGROUND RAILROAD

THE SECRET NETWORK OF PEOPLE WHO BRAVELY LED SLAVES TO LIBERTY BEFORE THE CIVIL WAR

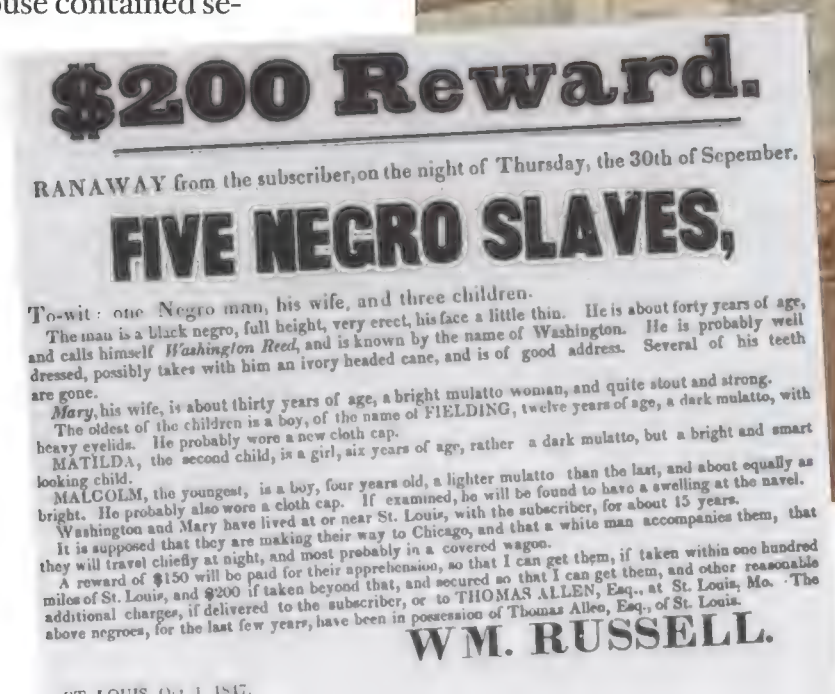
BY FERGUS M. BORDEWICH

THE PHONE RANG one drizzly morning in Carl Westmoreland's office overlooking the gray ribbon of the Ohio River and downtown Cincinnati. It was February 1998. Westmoreland, a descendant of slaves, scholar of African-American history and former community organizer, had recently joined the staff of the National Underground Railroad Freedom Center. Then still in the planning stages, the center, which opened this past August in Cincinnati, is the nation's first institution dedicated to the clandestine pre-Civil War network that helped tens of thousands of fugitive slaves gain their freedom.

The caller, who identified himself as Raymond Evers, claimed that a 19th-century "slave jail" was located on his property in northern Kentucky; he wanted someone to come out to look at it. As word of the center had gotten around, Westmoreland had begun to receive a lot of calls like this one, from individuals who said their house contained secret hiding places or who reported mysterious tunnels on their property. He had investigated many of these sites. Virtually none turned out to have any connection with the Underground Railroad.

"I'll call you back tomorrow," Westmoreland said.

The next day, his phone rang again. It was Evers. "So when are you coming out?" he asked. Westmoreland sighed. "I'm on my way," he said.



$200 Reward.

RANAWAY from the subscriber, on the night of Thursday, the 30th of September,

FIVE NEGRO SLAVES,

To-wit: one Negro man, his wife, and three children.

The man is a black negro, full height, very erect, his face a little thin. He is about forty years of age, and calls himself *Washington Reed*, and is known by the name of Washington. He is probably well dressed, possibly takes with him an ivory headed cane, and is of good address. Several of his teeth are gone.

Mary, his wife, is about thirty years of age, a bright mulatto woman, and quite stout and strong.

The oldest of the children is a boy, of the name of FIELDING, twelve years of age, a dark mulatto, with heavy eyelids. He probably wore a new cloth cap.

MATILDA, the second child, is a girl, six years of age, rather a dark mulatto, but a bright and smart looking child.

MALCOLM, the youngest, is a boy, four years old, a lighter mulatto than the last, and about equally as bright. He probably also wore a cloth cap. If examined, he will be found to have a swelling at the navel.

Washington and Mary have lived at or near St. Louis, with the subscriber, for about 15 years.

It is supposed that they are making their way to Chicago, and that a white man accompanies them, that they will travel chiefly at night, and most probably in a covered wagon.

A reward of $150 will be paid for their apprehension, so that I can get them, if taken within one hundred miles of St. Louis, and $200 if taken beyond that, and secured so that I can get them, and other reasonable additional charges, if delivered to the subscriber, or to THOMAS ALLEN, Esq., at St. Louis, Mo. The above negroes, for the last few years, have been in possession of Thomas Alleo, Esq., of St. Louis.

WM. RUSSELL.

Artifact of bondage: This 19th-century tobacco barn (on its original site, a Kentucky alfalfa pasture, in 1998) contains an interior hut fitted with manacles (inset, opposite). The entire structure—a slave jail—was dismantled and moved to Cincinnati, Ohio, where it forms the centerpiece of the National Underground Railroad Freedom Center, which opened in August.

In 1998, Raymond Evers (below), who believed his barn to be an 1800s slave jail, contacted the Freedom Center's Carl Westmoreland (above, at the Evers farm in September). Recalls Westmoreland: "I felt the way I did when I went to Auschwitz. It was dark, ominous."

An hour later, Westmoreland, a wiry man then in his early 60s, was slogging across a sodden alfalfa pasture in Mason County, Kentucky, eight miles south of the Ohio River, accompanied by Evers, 67, a retired businessman. The two made their way to a dilapidated tobacco barn at the top of a low hill.

"Where is it?" Westmoreland asked.

"Just open the door!" Evers replied.

In the darkened interior, Westmoreland made out a smaller structure built of rough-hewn logs and fitted with barred windows. Fastened to a joist inside the log hut were iron rings: fetters to which manacled slaves had once been chained. "I felt the way I did when I went to Auschwitz," Westmoreland later recalled. "I felt the power of the place—it was dark, ominous. When I saw the rings, I thought, it's like a slave-ship hold."

At first, Westmoreland had difficulty tracking down the history of the structure, where tobacco, corn and farm machinery had been stored for decades. But eventually Westmoreland located a Mason County resident who had heard from his father, who had heard from his grandfather, what had gone on in the little enclosure. "They chained 'em up over there, and sold 'em off like cattle," the Mason County man told Westmoreland.

At Westmoreland's urging, the Freedom Center accepted Evers' offer to donate the 32- by 27-foot structure. It was dismantled and transported to Cincinnati; the total cost for archaeological excavation and preservation was $2 million.

When the Freedom Center opened its doors on August 23, the stark symbol of brutality was the first thing that visitors encountered in the lofty atrium facing the Ohio River. Says Westmoreland: "This institution represents the first time that there has been an honest effort to honor and preserve our collective memory, not in a basement or a slum somewhere, but at the front door of a major metropolitan community."

By its own definition a "museum of conscience," the 158,000-square-foot copper-roofed structure hopes to engage visitors in a visceral way. "This is not a slavery museum," says executive director Spencer Crew, who moved to Cincinnati from Washington, D.C., where he was director of the Smithsonian Institution's National Museum of American History. "Rather, it is a place to engage people on the subject of slavery and race without finger-pointing. Yes, the center shows that slavery was terrible. But it also shows that there were people who stood up against it."

CAMERON DAVIDSON (2); P. 64, 65 NATIONAL UNDERGROUND RAILROAD FREEDOM CENTER (2); HANDBILL: LIBRARY OF CONGRESS

Increasingly from the 1830s on, slaves (perhaps in Arkansas, c. 1865) risked their lives to be free. Says historian Ira Berlin: "The Underground Railroad [showed] that slaves who were running away were neither happy nor well-treated, as apologists claimed."

Visitors will find, in addition to the slave jail, artifacts including abolitionists' diaries, wanted posters, ads for runaways, documents granting individual slaves their freedom and newspapers such as William Lloyd Garrison's militant *Liberator*, the first in the United States to call for immediate abolition. And they will encounter one of the most powerful symbols of slavery: shackles. "Shackles exert an almost mystical fascination," says Rita C. Organ, the center's director of exhibits and collections. "There were even small-sized shackles for children. By looking at them, you get a feeling of what our ancestors must have felt—suddenly you begin to imagine what it was like being huddled in a coffle of chained slaves on the march."

Additional galleries relate stories of the central figures in the Underground Railroad. Some, like Frederick Douglass and Harriet Tubman, are renowned. Many others, such as John P. Parker, a former slave who became a key activist in the Ohio underground, and his collaborator, abolitionist John Rankin, are little known.

Other galleries document the experiences of present-day Americans, people like Laquetta Shepard, a 24-year-old black West Virginia woman who in 2002 walked into the middle of a Ku Klux Klan rally and shamed the crowd into dispersing, and Syed Ali, a Middle Eastern gas station owner in New York City who prevented members of a radical Islamic group from setting fire to a neighborhood synagogue in 2003. Says Crew, "Ideally, we would like to create modern-day equivalents of the Underground Railroad conductors, who have the internal fortitude to buck society's norms and to stand up for the things they really believe in."

The center's concept grew out of a tumultuous period in the mid-1990s when Cincinnati was reeling from confrontations between the police and the African-American community and when Marge Schott, then the owner of the Cincinnati Reds, made comments widely regarded as racist. At a 1994 meeting of the Cincinnati chapter of the National Conference of Christians and Jews, its then-director, Robert "Chip" Harrod, proposed the idea of a museum devoted to the Underground Railroad. Since then, the center has raised some $60 million from private donations and another $50 million from public sources, including the Department of Education.

THE TERM UNDERGROUND RAILROAD is said to derive from the story of a frustrated slave hunter who, having failed to apprehend a runaway, exclaimed, "He must have gone off on an underground road!" In an age when smoke-belching locomotives and shining steel rails were novelties, activists

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FERGUS M. BORDEWICH is the author of Bound for Canaan: The Underground Railroad and the War for the Soul of America, *to be published in April by Amistad/HarperCollins.*

BEINECKE LIBRARY COLLECTION, YALE UNIVERSIRY

from New York to Illinois, many of whom had never seen an actual railroad, readily adopted its terminology, describing guides as "conductors," safe houses as "stations," horse-drawn wagons as "cars," and fugitives as "passengers."

Says Ira Berlin, author of *Many Thousands Gone: The First Two Centuries of Slavery in North America*: "The Underground Railroad played a critical role, by making the nature of slavery clear to Northerners who had been indifferent to it, by showing that slaves who were running away were neither happy nor well-treated, as apologists for slavery claimed. And morally, it demonstrated the enormous resiliency of the human spirit in the collaboration of blacks and whites to help people gain their freedom."

Thanks to the clandestine network, as many as 150,000 slaves may have found their way to safe havens in the North and Canada. "We don't know the total number and we will probably never know," says James O. Horton, a professor of American studies and history at George Washington University in Washington, D.C. "Part of the reason is that the underground was so successful: it kept its secrets well."

As the nation's second great civil disobedience movement—the first being the actions, including the Boston Tea Party, leading to the American Revolution—the Underground Railroad engaged thousands of citizens in the subversion of federal law. The movement provoked fear and anger in the South and prompted the enactment of draconian legislation, including the 1850 Fugitive Slave Law, which required Northerners to cooperate in the capture of escaped slaves. And at a time when proslavery advocates insisted that blacks were better off in bondage because they lacked the intelligence or ability to take care of themselves, it also gave many African-Americans experience in political organizing and resistance.

By the 1850s, activists from Delaware to Kansas had joined the underground to help fugitives elude capture. Wrote abolitionist Gerrit Smith in 1836: "If there be human enactments against our opening our door to our colored brother. . . . We must obey God."

"The Underground Railroad symbolized the intensifying struggle over slavery," says Berlin. "It was the result of the ratcheting up of the earlier antislavery movement, which in the years after the American Revolution, had begun to call for compensated emancipation and gradualist solutions to slavery." In the North, it brought African-Americans, often for the first time, into white communities where they could be seen as real people, with real families and real feelings. Ultimately, Berlin says, "the Underground Railroad forced whites to confront the reality of race in American society and to begin to wrestle with the reality in which black people lived all the time. It was a transforming experience."

FOR BLACKS AND WHITES alike the stakes were high. Underground agents faced a constant threat of punitive litigation, violent reprisal and possible death. "White participants in the underground found in themselves a depth of humanity that they hadn't realized they had," says Horton. "And for many of them, humanity won out over legality." As New York philanthropist Gerrit Smith, one of the most important financiers of the Underground Railroad, put it in 1836, "If there be human enactments against our entertaining the stricken stranger—against our opening our door to our poor, guiltless, and unaccused colored brother pursued by bloodthirsty kidnappers—we must, nevertheless, say with the apostle: 'We must obey God rather than man.'"

From the earliest years of American bondage—the Spanish held slaves in Florida in the late 1500s; Africans were sold to colonists at Jamestown in 1619—slaves had fled their masters. But until British Canada and some Northern states—including Pennsylvania and Massachusetts—began abolishing slavery at the end of the 18th century, there were no permanent havens for fugitives. A handful of slaves found sanctuary among several Native American tribes deep in the swamps and forests of Florida. The first coordinated Underground Railroad activity can be traced to the early 19th century, perhaps when free blacks and white Quakers began to provide refuge for runaways in and around Philadelphia, or perhaps when activists organized in Ohio.

The process accelerated throughout the 1830s. "The whole country was like a huge pot in a furious state of boiling over," recalled Addison Coffin in 1897. Coffin served as an underground conductor in North Carolina and Indiana. "It was almost universal for ministers of the gospel to run into the subject in all their sermons; neighbors would stop and argue pro and con across the fence; people traveling along the road would stop and argue the point." Although abolitionists initially faced the contempt of a society that largely took the existence of slavery for granted, the underground would eventually count among its members Rutherford B. Hayes, the future president, who as a young lawyer in the 1850s defended fugitive slaves; William Seward, the future governor of New York and secretary of state, who provided financial support to Harriet Tubman and other underground activists; and Allan Pinkerton, founder of the Pinkerton Detective Agency, who in 1859 helped John Brown lead a band of fugitive slaves out of Chicago and on to Detroit, bound for Canada. By the 1850s, the underground ranged from the

ARTHUR BOWEN DAVIES / BRIDGEMAN ART LIBRARY

The underground clarified the nature of slavery (fugitives brought ashore in Philadelphia in 1856) to Northerners. As the railroad accelerated, "the whole country," wrote conductor Addison Coffin in 1897, "was like a huge pot in a state of boiling over."

WILLIAM STILL / UNDERGROUND RAILROAD

northern borders of states including Maryland, Virginia and Kentucky to Canada and numbered thousands among its ranks from Delaware to Kansas.

But its center was the Ohio River Valley, where scores of river crossings served as gateways from slave states to free and where, once across the Ohio, fugitives could hope to be passed from farm to farm all the way to the Great Lakes in a matter of days.

In practice, the underground functioned with a minimum of central direction and a maximum of grass-roots involvement, particularly among family members and church congregations. "The method of operating was not uniform but adapted to the requirements of each case," Isaac Beck, a veteran of Underground Railroad activity in southern Ohio, would recall in 1892. "There was no regular organization, no constitution, no officers, no laws or agreement or rule except the 'Golden Rule,' and every man did what seemed right in his own eyes." Travel was by foot, horseback or wagon. One stationmaster, Levi Coffin, an Indiana Quaker and Addison's uncle, kept a team of horses harnessed and a wagon ready to go at his farm in Newport (now Fountain City), Indiana. When additional teams were needed, Coffin wrote in his memoir, posthumously published in 1877, "the people at the livery stable seemed to understand what the teams were wanted for, and they asked no questions."

On occasion, fugitives might be transported in hearses or false-bottomed wagons, men might be disguised as women, women as men, blacks powdered white with talc. The volume of underground traffic varied widely. Levi Coffin estimated that during his lifetime he assisted 3,300 fugitives—some 100 or so annually—while others, who lived along more lightly traveled routes, took in perhaps two or three a month, or only a handful over several years.

ONE OF THE MOST ACTIVE underground centers—and the subject of a 15-minute docudrama, *Brothers of the Borderland*, produced for the Freedom Center and introduced by Oprah Winfrey—was Ripley, Ohio, about 50 miles east of Cincinnati. Today, Ripley is a sleepy village of two- and three-story 19th-century houses nestled at the foot of low bluffs, facing south toward the Ohio River and the cornfields of Kentucky beyond. But in the decades preceding the Civil War, it was one of the busiest ports between Pittsburgh and Cincinnati, its economy fueled by river traffic, shipbuilding and pork butchering. To slave owners, it was known as "a black, dirty Abolition hole"—and with good reason. Since the 1820s, a network of radical white Presbyterians, led by the Rev. John Rankin, a flinty Tennessean who had moved north to escape the atmosphere of slavery, collaborated with local blacks on both sides of the river in one of the most successful underground operations.

The Rankins' simple brick farmhouse still stands on a hilltop. It was visible for miles along the river and well into Kentucky. Arnold Gragston, who as a slave in Kentucky ferried scores of fugitives across the then 500- to 1,500-foot-wide

Ohio River, later recalled that Rankin had a "lighthouse in his yard, about thirty feet high."

Recently, local preservationist Betty Campbell led the way into the austere parlor of the Rankin house, now a museum open to the public. She pointed out the fireplace where hundreds of runaways warmed themselves on winter nights, as well as the upstairs crawl space where, on occasion, they hid. Because the Rankins lived so close to the river and within easy reach of slave hunters, they generally sheltered fugitives only briefly before leading them on horseback along an overgrown streambed through a forest to a neighboring farmhouse a few miles north.

"The river divided the two worlds by law, the North and the South, but the cultures were porous," Campbell said, gazing across the river's gray trough toward the bluffs of Kentucky, a landscape not much altered since the mid-19th century. "There were antislavery men in Kentucky, and also proslavery men here in Ohio, where a lot of people had Southern origins and took slavery for granted. Frequently, trusted slaves were sent from Kentucky to the market at Ripley."

For families like the Rankins, the clandestine work became a full-time vocation. Jean Rankin, John's wife, was responsible for seeing that a fire was burning in the hearth and food kept on the table. At least one of the couple's nine sons remained on call, prepared to saddle up and hasten his charges to the next way station. "It was the custom with us

In Ohio, the market town of Ripley (site of underground conductor John Parker's house, below, before restoration and after, and the activist Rankin family homestead, bottom) became a major way station. Slave owners called the village an "Abolition hole."

OHIO HISTORICAL SOCIETY; CAMERON DAVIDSON (2)

not to talk among ourselves about the fugitives lest inadvertently a clue should be obtained of our modus operandi," the Rankins' eldest son, Adam, wrote years later in an unpublished memoir. "'Another runaway went through at night' was all that would be said."

One Rankin collaborator, Methodist minister John B. Mahan, was arrested at his home and taken back to Kentucky, where after 16 months in jail he was made to pay a ruinous fine that impoverished his family and likely contributed to his early death. In the summer of 1841, Kentucky slaveholders assaulted the Rankins' hilltop stronghold. They were repulsed only after a gun battle that left one of the attackers dead. Not even the Rankins would cross the river into Kentucky, where the penalty for "slave stealing" was up to 21 years' imprisonment. One Ripley man who did so repeatedly was John P. Parker, a former slave who had bought his freedom in Mobile, Alabama; by day, he operated an iron foundry. By night, he ferried slaves from Kentucky plantations across the river to Ohio. Although no photograph of Parker has survived, his saga has been preserved in a series of interviews recorded in the 1880s and published in 1996 as *His Promised Land: The Autobiography of John P. Parker*.

As many as 150,000 slaves may have gained freedom (as depicted in 1863). "We will probably never know [the total]," says historian James O. Horton. "Part of the reason is that the underground was so successful: it kept its secrets well."

On one occasion, Parker learned that a party of fugitives, stranded after the capture of their leader, was hiding about 20 miles south of the river. "Being new and zealous in this work, I volunteered to go to the rescue," Parker recalled. Armed with a pair of pistols and a knife, and guided by another slave, Parker reached the runaways at about dawn. He found them hidden in deep woods, paralyzed with fear and "so badly demoralized that some of them wanted to give themselves up rather than face the unknown." Parker led the ten men and women for miles through dense thickets.

With slave hunters closing in, one of the fugitives insisted on setting off in search of water. He had gone only a short way before he came hurtling through the brush, pursued by two white men. Parker turned to the slaves still in hiding. "Drawing my pistol," he recalled, "I quietly told them that I would shoot the first one that dared make a noise, which had a quieting effect." Through thickets, Parker saw the captured slave being led away, his arms tied behind his back. The group proceeded to the river, where a patroller spotted them.

Though the lights of Ripley were visible across the water, "they might as well have been [on] the moon so far as being a relief to me," Parker recalled. Bloodhounds baying in their ears, the runaways located a rowboat quickly enough, but it had room for only eight people. Two would have to be left behind. When the wife of one of the men picked to stay behind began to wail, Parker would recall, "I witnessed an example of heroism that made me proud of my race." One of the men in the boat gave up his seat to the woman's husband. As Parker rowed toward Ohio and freedom, he saw slave hunters converge on the spot where the two men had been left behind. "I knew," he wrote later, "the poor fellow had been captured in sight of the promised land."

Parker carried a $2,500 price on his head. More than once, his house was searched and he was assaulted in the streets of Ripley. Yet he estimated that he managed to help some 440 fugitives to freedom. In 2002, Parker's house on the Ripley waterfront—restored by a local citizens' group headed by Campbell—opened to the public.

ON A CLEAR DAY last spring, Carl Westmoreland returned to the Evers farm. Since his first visit, he had learned that the slave jail had been built in the 1830s by a prosperous slave trader, John Anderson, who used it to hold slaves en route by flatboat to the huge slave market at Natchez, Mississippi, where auctions were held several times a year. Anderson's manor house is gone now, as are the cabins of the slaves who served in his household, tended his land and probably even operated the jail itself.

"The jail is a perfect symbol of forgetting," Westmoreland said at the time, not far from the slave trader's overgrown grave. "For their own reasons, whites and blacks both tried to forget about that jail, just as the rest of America tried to forget about slavery. But that building has already begun to teach, by causing people to go back and look at the local historical record. It's doing its job." Anderson died in 1834 at the age of 42. Westmoreland continued: "They say that he tripped over a grapevine and fell onto the sharp stump of a cornstalk, which penetrated his eye and entered his brain. He was chasing a runaway slave."

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Audubon

AMERICA'S RARE BIRD

A new biography tells how the foreign-born frontiersman became one of the 19th century's greatest wildlife artists and a patron saint of the ecology movement ~ *BY RICHARD RHODES*

THE HANDSOME, excitable 18-year-old Frenchman who would become John James Audubon had already lived his way through two names when he landed in New York from Nantes, France, in August 1803. His father, Jean, a canny ship's captain with Pennsylvania property, had sent his only son off to America to escape conscription in the Napoleonic Wars. Jean Audubon owned a plantation near Valley Forge called Mill Grove, and the tenant who farmed it had reported a vein of lead ore. John James was supposed to evaluate the tenant's report, learn what he could of plantation management, and eventually—since the French and Haitian revolutions had significantly diminished the Audubon fortune—make a life for himself.

He did that and much, much more. He married an extraordinary woman, opened a string of general stores on the Kentucky frontier and built a great steam mill on the Ohio River. He explored the American wilderness from Galveston Bay to Newfoundland, hunted with Cherokee and Osage, rafted the Ohio and the Mississippi. Throughout his travels, he identified, studied and drew almost 500 species of American birds. Single-handedly, Audubon raised the equivalent of millions of dollars to publish a great, four-volume work of art and science, *The Birds of America.* He wrote five volumes of "bird biographies" chock-full of narratives of pioneer life and won fame enough to dine with presidents. He became a national icon—"the American Woodsman," a name he gave himself. The record he left of the American wilderness is unsurpassed in its breadth and originality of observation; the Audubon Society, when it was initially founded in 1886, decades after his death, was right to invoke his authority. He was one of only two Ameri-

NATIONAL PORTRAIT GALLERY, SMITHSONIAN INSTITUTION / ART RESOURCE, N.Y.

From the book *John James Audubon* by Richard Rhodes © 2004 by Richard Rhodes. Published by arrangement with Alfred A. Knopf, a division of Random House, Inc.

Audubon wrote that he wanted his drawings to bring birds (opposite, a snowy egret) back to life, "to complete a collection not only valuable to the scientific class, but pleasing to every person."

cans elected Fellows of the Royal Society of London, the preeminent scientific organization of its day, prior to the American Civil War; the other was Benjamin Franklin.

John James had been born Jean Rabin, his father's bastard child, in 1785 on Jean Audubon's sugar plantation on Saint Domingue (soon to be renamed Haiti). His mother was a 27-year-old French chambermaid, Jeanne Rabin, who died of an infection within months of his birth. The stirrings of slave rebellion on the island in 1791 prompted Jean Audubon to sell what he could of his holdings and ship his son home to France, where his wife, Anne, whom Jean had married long before, welcomed the handsome boy and raised him as her own.

When the Reign of Terror that followed the French Revolution approached Nantes in 1793, the Audubons formally adopted Jean Rabin, to protect him, and christened him Jean Jacques or Fougère Audubon. Fougère—"Fern"—was an offering to placate the revolutionary authorities, who scorned the names of saints. Jean-Baptiste Carrier, a revolutionary envoy sent out from Paris to quell the peasant counterrevolution in western France, ordered the slaughter of thousands in Nantes, a principal city in the region. Firing squads bloodied the town square. Other victims were chained to barges and sunk in the Loire; their remains tainted the river for months. Though Jean Audubon was an officer in the Revolutionary French Navy, he and his family were dungeoned. After the terror, he moved his family downriver to a country house in the riverside village of Couëron. Now his only son was escaping again.

Audubon, who would become famous in Europe as "the American Woodsman" (a dramatized self-portrait is a detail in his 1833 golden eagle painting), spent months at a time in the wilderness collecting, drawing—and eating—his specimens.

THE YOUNG COUNTRY to which John James Audubon immigrated in the summer of 1803 was barely settled beyond its eastern shores; Lewis and Clark were just then preparing to depart for the West. France in that era counted a population of more than 27 million, Britain about 15 million, but only 6 million people thinly populated the United States, two-thirds of them living within 50 miles of Atlantic tidewater. In European eyes America was still an experiment. It would need a second American revolution—the War of 1812—to compel England and Europe to honor American sovereignty.

But the generation of Americans that the young French émigré was joining was different from its parents'. It was migrating westward and taking great risks in pursuit of new opportunities its elders had not enjoyed. Audubon's was the era, as the historian Joyce Appleby has discerned, when "the autonomous individual emerged as an [American] ideal." Individualism, Appleby writes, was not a natural phenomenon but "[took] shape historically [and] came to personify the nation." And no life was at once more unusual and yet more representative of that expansive era when a national character emerged than Audubon's. Celebrate him for his wonderful birds, but recognize him as well as a characteristic American of the first generation—a man who literally made a name for himself.

Lucy Bakewell, the tall, slim, gray-eyed girl next door whom he married, came from a distinguished English family. Erasmus Darwin, a respected physician, poet and naturalist and grandfather to Charles, had dandled her on his knee in their native Derbyshire. Her father had moved his family to America when she was 14 to follow Joseph Priestley, the chemist and religious reformer, but opportunity had also drawn the Bakewells. Their Pennsylvania plantation, Fatland Ford, was more ample than the Audubons', and William Bakewell sponsored one of the first experiments in steam-powered threshing there while his young French neighbor lay ill with a fever in his house and under his talented daughter's care. Lucy was a gifted pianist, an enthusiastic reader and a skillful rider—sidesaddle—who kept an elegant house. She and John James, once they married and moved out to Kentucky in 1808, regularly swam across and back the half-mile-wide Ohio for morning exercise.

Lucy's handsome young Frenchman had learned to be a naturalist from his father and his father's medical friends, exploring the forested marshes along the Loire. Lucy's younger brother Will Bakewell left a memorable catalog of his future brother-in-law's interests and virtues; even as a young man, Audubon was someone men and women alike wanted to be around:

> "On entering his room, I was astonished and delighted to find that it was turned into a museum. The walls were festooned with all kinds of birds' eggs, carefully blown out and strung on a thread. The chimney-piece was covered with stuffed squirrels, raccoons, and opossums; and the shelves around were likewise crowded with specimens, among which were fishes, frogs, snakes, lizards, and other reptiles. Besides these stuffed varieties, many paintings were arrayed on the walls, chiefly of birds. . . . He was an admirable marksman, an expert swimmer, a clever rider, possessed of great activity

RICHARD RHODES won a 1988 Pulitzer Prize for The Making of the Atomic Bomb. *His* An Audubon Reader *will appear next year.*

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[and] prodigious strength, and was notable for the elegance of his figure and the beauty of his features, and he aided nature by a careful attendance to his dress. Besides other accomplishments he was musical, a good fencer, danced well, and had some acquaintance with legerdemain tricks, worked in hair, and could plait willow baskets."

In 1804, Audubon was curious whether the eastern phoebes that occupied an old nest above a Mill Grove cave were a pair returned from the previous year. "When they were about to leave the nest," Audubon wrote, "I fixed a light silver thread to the leg of each." His experiment was the first recorded instance in America of birdbanding, a now routine technique for studying bird migration. Two of the phoebes that returned the following spring still carried silver threads. One, a male, remembered Audubon well enough to tolerate his presence near its nest, though its mate shied away.

Audubon had begun teaching himself to draw birds in France. Operating general stores in Louisville and then downriver in frontier Henderson, Kentucky, he was responsible for keeping the cooking pot filled with fish and game and the shelves with supplies while his business partner ran the store and Lucy kept house, worked the garden and bore John James two sons. As he hunted and traveled, he improved his art on American birds and kept careful field notes as well. His narrative of an encounter with a flood of passenger pigeons in Kentucky in autumn 1813 is legendary. He gave up trying to count the passing multitudes of the grayish blue, pink-breasted birds that numbered in the billions at the time of the European discovery of America and now are extinct. "The air was literally filled with Pigeons," he wrote of that encounter; "the light of noon-day was obscured as by an eclipse; the dung fell in spots, not unlike melting flakes of snow; and the continued buzz of wings had a tendency to lull my senses to repose." His observations match his best drawings in vivacity: of chimney swifts lining a hollow sycamore stump near Louisville like bats in a cave, brown pelicans fishing the shallows of the Ohio, sandhill cranes tearing away waterlily roots in a backwater slough, and robins down from Labrador occupying apple trees. He saw bald eagles that nested by the hundreds along the Mississippi swooping like falling stars to strike swans to the ground. Crowds of black vultures, protected by law, patrolled the streets of Natchez and Charleston to clean up carrion and roosted at night on the roofs of houses and barns. Bright scarlet, yellow and

Unlike artists who posed birds in unnatural tableaux, Audubon took pains to show them in action (below, a gun blast hits a male common goldeneye while the female recoils). The goldeneye, Audubon said, is "fishy" and "unfit for being eaten."

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emerald green Carolina parakeets, now extinct, completely obscured a shock of grain like "a brilliantly colored carpet" in the center of a field, and a least bittern stood perfectly still for two hours on a table in his studio while he drew it.

Not many of the birds Audubon drew stood still for him, nor had cameras or binoculars yet been invented. To study and draw birds it was necessary to shoot them. Audubon's predecessors typically skinned their specimens, preserved the skins with arsenic, stuffed them with frayed rope and set them up on branches to draw them. The resulting drawings looked as stiff and dead as their subjects. Audubon dreamed of revivifying his specimens—even the colors of their feathers changed within 24 hours of death, he said—and at Mill Grove, still a young man, he found a way to mount freshly killed specimens on sharpened wires set into a gridded board that allowed him to position them in lifelike attitudes. He drew them first, then filled in his drawings with watercolor that he burnished with a cork to imitate the metallic cast of feathers. After drawing, he often performed an anatomical dissection. Then, because he usually worked deep in the wilderness, far from home, he cooked and ate his specimens. Many of the descriptions in his *Ornithological Biography* mention how a species tastes—testimony to how quickly the largely self-taught artist drew. "The flesh of this bird is tough and unfit for food," he writes of the raven. The green-winged teal, on the other hand, has "delicious" flesh, "probably the best of any of its tribe; and I would readily agree with any epicure in saying, that when it has fed on wild oats at Green Bay, or on soaked rice in the fields of Georgia and the Carolinas, for a few weeks after its arrival in those countries, it is much superior to the Canvass-back in tenderness, juiciness and flavor."

"My Lucy [below, in 1831] and myself alone have faith" in *The Birds of America*, Audubon wrote of his grand project some 15 years before it was completed in 1838. An osprey (opposite) flies off "to devour the fruit of its industry in peace."

Though drawing birds had been something of an obsession, it was only a hobby until Audubon's mill and general stores went under in the Panic of 1819, a failure his critics and many of his biographers have ascribed to a lack of ability or irresponsible distraction by his art. But nearly every business in the trans-Appalachian West failed that year, because the Western state banks and the businesses they serviced were built on paper. "One thing seems to be universally conceded," an adviser told the governor of Ohio, "that the greater part of our mercantile citizens are in a state of bankruptcy—that those of them who have the largest possessions of real and personal estate . . . find it almost impossible to raise sufficient funds to supply themselves with the necessaries of life." The Audubons lost everything except John James' portfolio and his drawing and painting supplies. Before he declared bankruptcy, Audubon was even briefly thrown in jail for debt.

Through these disasters, Lucy never failed him, although they lost an infant daughter to fever the following year. "She felt the pangs of our misfortunes perhaps more heavily than I," Audubon remembered gratefully of his stalwart love, "but never for an hour lost her courage; her brave and cheerful spirit accepted all, and no reproaches from her beloved lips ever wounded my heart. With her was I not always rich?"

Audubon took up portrait drawing at $5 a head. His friends helped him find work painting exhibit backgrounds and doing taxidermy for a new museum in Cincinnati modeled on painter Charles Wilson Peale's famous museum in Philadelphia, which Audubon knew from his Mill Grove days. Peale's Philadelphia Museum displayed stuffed and mounted birds as if alive against natural backgrounds, and preparing such displays in Cincinnati probably pointed Audubon to his technical and aesthetic breakthrough of portraying American birds in realistic, lifelike settings. Members of a government expedition passing through Cincinnati in the spring of 1820, including the young artist Titian Ramsey Peale, son of the Philadelphia museum keeper, alerted Audubon to the possibility of exploring beyond the Mississippi, the limit of frontier settlement at that time. Daniel Drake, the prominent Cincinnati physician who had founded the new museum, praised Audubon's work in a public lecture and encouraged him to think of adding the birds of the Mississippi flyway to his collection, extending the range of American natural history; the few ornithologists who had preceded Audubon had limited their studies to Eastern species.

By spring 1820, Drake's museum owed Audubon $1,200, most of which it never paid. The artist scraped together such funds as he could raise from drawing and teaching art to support Lucy and their two boys, then 11 and 8, who moved in with relatives again while he left to claim his future. He recruited his best student, 18-year-old Joseph Mason, to draw backgrounds, bartered his hunting skills for boat passage on a commercial flatboat headed for New Orleans, and in October floated off down the Ohio and the Mississippi.

FOR THE NEXT FIVE YEARS Audubon labored to assemble a definitive collection of drawings of American birds while struggling to support himself and his family. He had decided to produce a great work of art and ornithology (a decision that Lucy's relatives condemned as derelict): *The Birds of America* would comprise 400 two- by three-foot engraved, hand-colored plates of American birds "at the size of life" to be sold in sets of five, and collected into four huge, leather-bound volumes of 100 plates each, with five leather-bound accompanying volumes of bird biographies worked up from his field notes.

He had found a paradise of birds in the deciduous forests

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and bluegrass prairies of Kentucky; he found another paradise of birds in the pine forests and cypress swamps of Louisiana around St. Francisville in West Feliciana Parish, north of Baton Rouge, inland from the river port of Bayou Sarah, where prosperous cotton planters hired him to teach their sons to fence and their daughters to draw and to dance the cotillion. Elegant Lucy, when finally he was able to move her and the boys south to join him there, opened a popular school of piano and deportment on a cotton plantation operated by a hardy Scottish widow.

On his first inspection of the St. Francisville environs, Audubon identified no fewer than 65 species of birds. He probably collected there the bird he rendered in what would become his best-known image, the prized first plate of *The Birds of America*—a magnificent specimen of wild turkey cock that he had called from a Mississippi canebrake with a caller made from a wing bone.

Finally, in May 1826, Audubon was ready to find an engraver for his crowded portfolio of watercolor drawings. He would have to travel to Europe; no American publisher yet commanded the resources to engrave, hand color and print such large plates. Forty-one years old, with the equivalent of about $18,000 in his purse and a collection of letters of introduction from New Orleans merchants and Louisiana and Kentucky politicians, including Senator Henry Clay, he sailed from New Orleans on a merchant ship bound for Liverpool with a load of cotton. He was trusting to charm, luck and merit; he knew hardly anyone in England. In Liverpool, Lucy's younger sister Ann and her English husband, Alexander Gordon, a cotton factor, took one look at Audubon's rough frontier pantaloons and unfashionable shoulder-length chestnut hair (about which he was comically vain) and asked him not to call again at his place of business. But James Fenimore Cooper's *The Last of the Mohicans* had been published in London in April and was blooming to a nationwide fad, and some who met Audubon in Liverpool judged him a real-life Natty Bumppo. The letters he carried introduced him to the first family of Liverpool shipping, the Rathbones, Quaker abolitionists who recognized his originality and sponsored him socially. Within a month, he was a celebrity, his presence sought at every wealthy table; his in-laws soon came round.

"The man . . . was not a man to be seen and forgotten, or passed on the pavement without glances of surprise and scrutiny," an anonymous contemporary wrote. "The tall and somewhat stooping form, the clothes not made by a West-end but a Far West tailor, the steady, rapid, springing step, the long hair, the aquiline features, and the glowing angry eyes—the expression of a handsome man conscious of ceasing to be young, and an air and manner which told you that whoever you might be he was John Audubon, will never be forgotten by anyone who knew or saw him."

Not only Audubon's novelty won him attention in Liverpool and then in Manchester, Edinburgh and London. Britain was the most technologically advanced nation in the world in 1826, with gaslights illuminating its cities, steam

"You are the king of ornithological painters," a French artist exclaimed in 1828 when he saw Audubon's Carolina parakeets, which are now extinct (opposite). "Who would have expected such things from the woods of America!"

mills weaving cotton, steamboats plying its ports and railroad lines beginning to replace its mature network of canals, but the only permanent images then available in the world were originally drawn by hand. Traveling from city to city, Audubon would hire a hall and fill it with his life-size watercolors of birds luminescent against their backgrounds of wilderness, hundreds of images at a time, and charge admission to the visitors who flocked to see them. A French critic who saw the drawings in Edinburgh was entranced:

> "Imagine a landscape wholly American, trees, flowers, grass, even the tints of the sky and the waters, quickened with a life that is real, peculiar, trans-Atlantic. On twigs, branches, bits of shore, copied by the brush with the strictest fidelity, sport the feathered races of the New World, in the size of life, each in its particular attitude, its individuality and peculiarities. Their plumages sparkle with nature's own tints; you see them in motion or at rest, in their plays and their combats, in their anger fits and their caresses, singing, running, asleep, just awakened, beating the air, skimming the waves, or rending one another in their battles. It is a real and palpable vision of the New World, with its atmosphere, its imposing vegetation, and its tribes which know not the yoke of man. . . . And this realization of an entire hemisphere, this picture of a nature so lusty and strong, is due to the brush of a single man; such an unheard-of triumph of patience and genius!"

So many scenes of birds going about their complicated lives would have flooded viewers' senses as an IMAX Theater presentation floods viewers today, and all the more so because the world these creatures inhabited was America, still largely wilderness and a romantic mystery to Europeans, as Audubon discovered to his surprise. He answered questions about "Red Indians" and rattlesnakes, and imitated war whoops and owl hoots until he could hardly bear to accept another invitation.

But accept he did, because once he found an engraver in London worthy of the great project, which he had calculated would occupy him for 16 years, the prosperous merchants and the country gentry would become his subscribers, paying for the five-plate "Numbers" he issued several times a year and thus sustaining the enterprise. (When the plates accumulated to a volume, the subscribers had a choice of bindings, or they could keep their plates unbound. One titled lady used them for wallpaper in her dining room.)

Audubon thus produced *The Birds of America* pay as you go, and managed to complete the work in only ten years, even though he had to increase the total number of plates to 435 as he identified new species on collecting expeditions back to the Carolinas and East Florida, the Republic of Texas, northeastern Pennsylvania, Labrador and the Jersey

VICTORIA AND ALBERT MUSEUM, LONDON, GREAT BRITAIN / ART RESOURCE

Shore. In the end, he estimated that the four-volume work, issued in fewer than 200 copies, cost him $115,640—about $2,141,000 today. (One fine copy sold in 2000 for $8,802,500.) Unsupported by gifts, grants or legacies, he raised almost every penny of the immense cost himself from painting, exhibiting and selling subscriptions and skins. He paced the flow of funds to his engraver so that, as he said proudly, "the continuity of its execution" was not "broken for a single day." He paced the flow of drawings as well, and before that the flow of expeditions and collections. He personally solicited most of his subscribers and personally serviced most of his accounts. Lucy supported herself and their children in Louisiana while he was establishing himself; thereafter he supported them all and the work as well. If he made a profit, it was small, but in every other way the project was an unqualified success. After he returned to America, he and his sons produced a less costly octavo edition with reduced images printed by lithography. The octavo edition made him rich.

These facts should lay to rest once and for all the enduring canard that John James Audubon was "not a good businessman." When he set out to create a monumental work of art with his own heart and mind and hands, he succeeded—a staggering achievement, as if one man had singlehandedly financed and built an Egyptian pyramid.

Audubon's sons John (who painted John James' portrait below) and Victor sustained the publishing enterprise after their father's death in 1851. But the family was ruined when they lost most of their customers during the Civil War.

He did not leave Lucy languishing in West Feliciana all those years, but before he could return to America for the first time to collect her, their miscommunications, exacerbated by the uncertainties and delays of mail delivery in an era of sailing ships, nearly wrecked their marriage. Lonely for her, he wanted her to close her school and come to London; she was willing once she had earned enough to keep their sons in school. But a round of letters took six months, and one ship in six (and the letters it carried) never made port. By 1828 Audubon had convinced himself that Lucy expected him to amass a fortune before she would leave Louisiana, while she feared her husband had been dazzled by success in glamorous London and didn't love her anymore. (Audubon hated London, which was fouled with coal smoke.) Finally, she insisted that he come in person to claim her, and after finding a trustworthy friend to handle a year's production of plates for *Birds*, he did, braving the Atlantic, crossing the mountains to Pittsburgh by mail coach, racing down the Ohio and the Mississippi by steamboat to Bayou Sarah, where he disembarked in the middle of the night on November 17, 1829. Lucy had moved her school to William Garrett Johnson's Beech Grove plantation by then, 15 miles inland; that was where Audubon was headed:

> "It was dark, sultry, and I was quite alone. I was aware yellow fever was still raging at St. Francisville, but walked thither to procure a horse. Being only a mile distant, I soon reached it, and entered the open door of a house I knew to be an inn; all was dark and silent. I called and knocked in vain, it was the abode of Death alone! The air was putrid; I went to another house, another, and another; everywhere the same state of things existed; doors and windows were all open, but the living had fled. Finally I reached the home of Mr. Nübling, whom I knew. He welcomed me, and lent me his horse, and I went off at a gallop. It was so dark that I soon lost my way, but I cared not, I was about to rejoin my wife, I was in the woods, the woods of Louisiana, my heart was bursting with joy! The first glimpse of dawn set me on my road, at six o'clock I was at Mr. Johnson's house; a servant took the horse, I went at once to my wife's apartment; her door was ajar, already she was dressed and sitting by her piano, on which a young lady was playing. I pronounced her name gently, she saw me, and the next moment I held her in my arms. Her emotion was so great I feared I had acted rashly, but tears relieved our hearts, once more we were together."

And together they remained, for the rest of their lives.

If Audubon's life resembles a 19th-century novel, with its missed connections, Byronic ambitions, dramatic reversals and passionate highs and lows, 19th-century novels were evidently more realistic than moderns have understood. Besides his art, which is as electrifying on first turning the pages of *The Birds of America* today as it was two centuries ago—no one has ever drawn birds better—Audubon left behind a large collection of letters, five written volumes, two complete surviving journals, fragments of two more, and a name that has become synonymous with wilderness and wildlife preservation. "All, but the remembrance of his goodness, is gone forever," Lucy wrote sadly of her husband's death, at age 65, from complications of dementia in January 1851. For Lucy all was gone—she lived on until 1874—but for the rest of us, wherever there are birds there is Audubon, a rare bird himself, a bird of America.

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Slices of LIFE

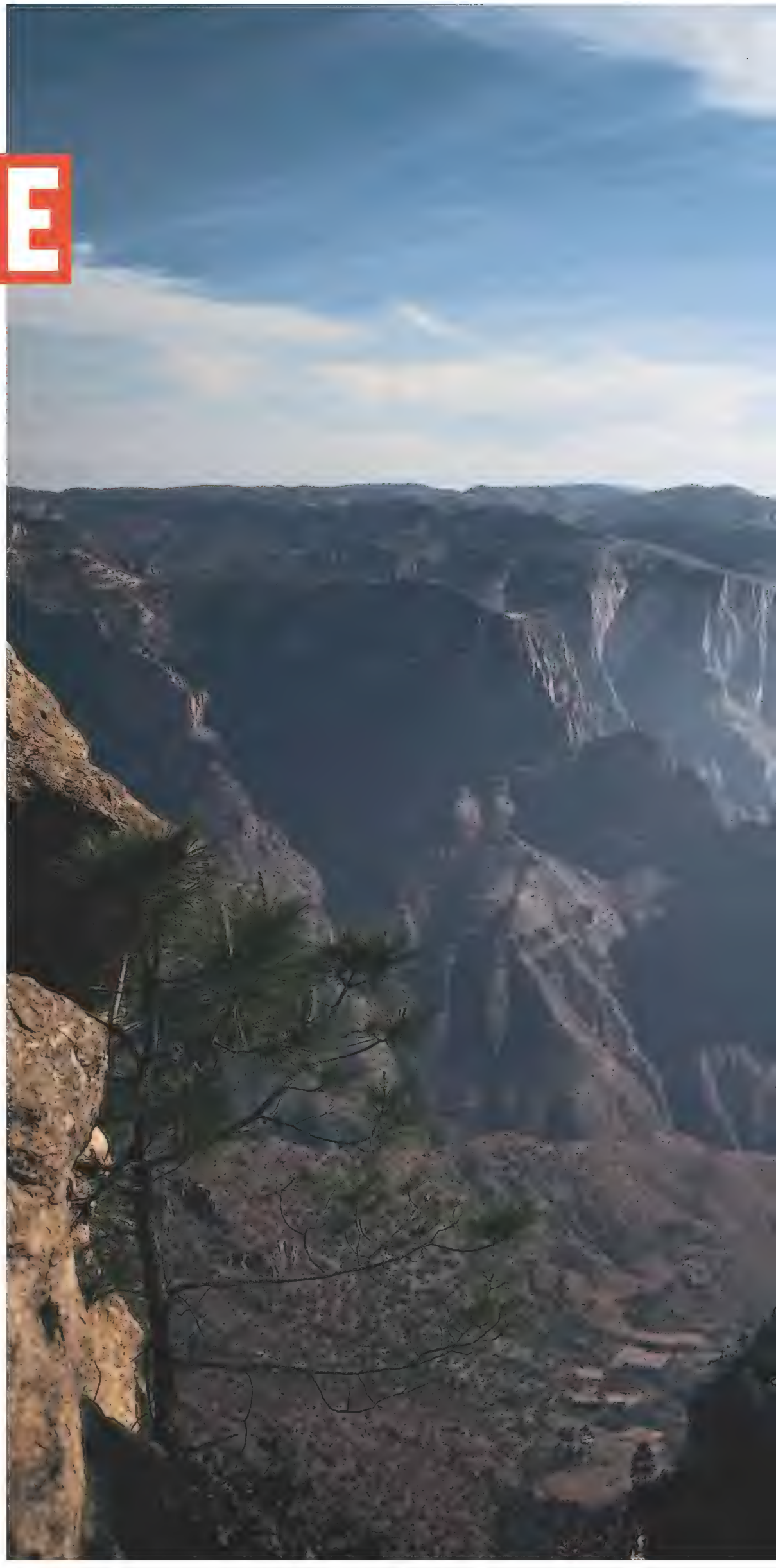
From Hollywood to Buchenwald and Manhattan to the Kalahari, the magazine pioneered photojournalism as we know it. A new book shows how

BY JOHN LOENGARD

IT HAS BEEN the writer's job since ancient times to describe how people behave. With the invention of photography, it became the business of the photographer too. But while writers can gather material simply by talking with people, even on a telephone, photographers and their subjects must interact. The subject must do something of interest, smack-dab in front of the camera—or there is no picture. Luck is important, but it is equally important for photographers to know what to bring out in a subject. To know that, they must have their own point of view. "We were all individualists," said Alfred Eisenstaedt, dean of photographers for the weekly *Life*, which defined and dominated photojournalism for its four decades of existence.

Eisie, as he was known, was describing the photographers who had been on the magazine's staff since 1936—a number that would eventually grow to 90, including myself. As Henry Luce, the magazine's founder, put it in *Life*'s prospectus, the *Life* photographers' business was "to see life; to see the world; to eyewitness great events."

Life photographers witnessed events, and they witnessed them up close. Twenty-one of them covered fighting in World War II for the magazine. None of them photographed a general's strategy, or the tactics of a platoon. No one could do that. But they proved that the expression on the face of a single soldier could describe



Adapted from *The Great LIFE Photographers*, published in November 2004 by Bulfinch Press. © 2004 by Time Inc.

In 1950, *Life* photographer Ralph Crane joined a 58-day expedition to hunt for bird life in Mexico's Barranca de Cobre (Copper Canyon). "Spirits picked up when the men spotted a pair of rare Stygian owls and later a thick-billed parrot," the magazine reported.

Below: "Mad" Marshall Jacobs logged almost a month perched atop a 176-foot-high flagpole as a paying attraction at the Coshocton, Ohio, fairgrounds before his planned aerial wedding to Yolanda Cosmar. But the nuptials almost didn't get off the ground after the couple quarreled over Jacobs' refusal to spend part of their honeymoon on display in a complimentary bridal suite as a hotel publicity stunt. "I've been up here where everybody could look at me for nearly a month," said Jacobs. "We're going someplace we can be to ourselves." On June 30, 1946, the couple went up the flagpole for the ceremony, recalls Allan Grant, 84, who re-created the moment after a helicopter-borne attempt by another *Life* photographer yielded blurry results. "The only platform I could think of with no vibrations was a Goodyear blimp," says Grant. "They agreed to do it if we would mention the blimp in the story." Grant also photographed starlet Jayne Mansfield (opposite) in 1957 in her Hollywood swimming pool, among hot-water bottles in her image, which now fetch hundreds of dollars each on Internet auction sites. "I could have been a multimillionaire [if I'd saved some]," jokes Grant. "They kept floating away when I was shooting the picture." Mansfield died in a car crash in 1967 at age 34, on her way to a New Orleans nightclub appearance. Her daughter, Mariska Hargitay, now stars in the television drama series "Law and Order: Special Victims Unit."

war best. And what was learned in World War II became part of the magazine's tradition in subsequent conflicts. Consider David Douglas Duncan's corporal under fire, striding over a corpse lying across a trail, in Korea. Think of Larry Burrows' helicopter crewman reacting to a young lieutenant's death in Vietnam.

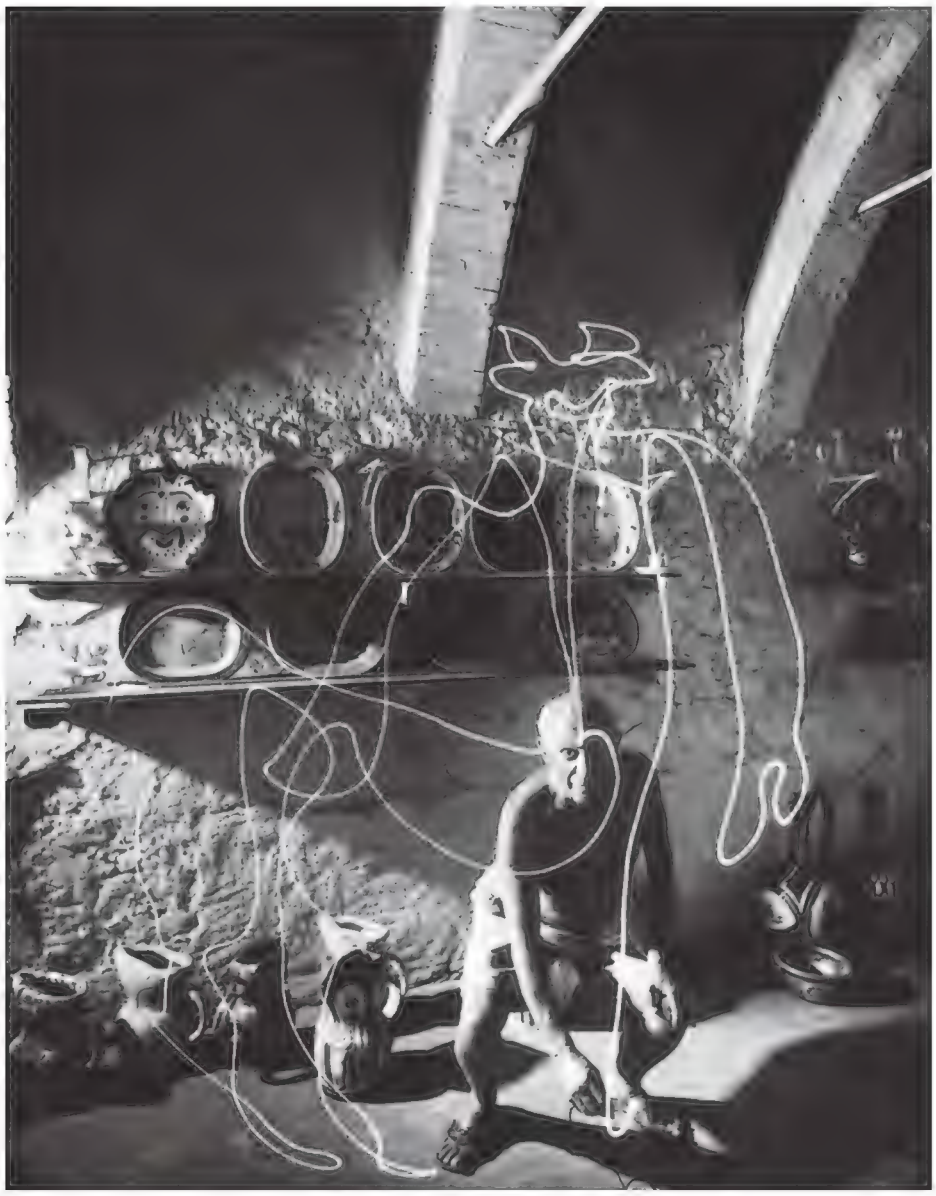
Of the weekly's many photographers, few had more adventures in war than one of the women on the staff, Margaret Bourke-White. She photographed the German bombardment of Moscow in 1941, spent a harrowing night in a lifeboat after evacuating a torpedoed ship, flew in combat over North Africa, covered the fighting in Italy and Germany, and witnessed the liberation of Buchenwald in 1945.

Robert Capa, who reached Omaha Beach with the first wave at dawn on D-Day, once famously said, "If your pictures aren't good enough, you're not close enough." Getting close enough means putting oneself in harm's way. Except for W. Eugene Smith, who was badly wounded on Okinawa, Capa, Bourke-White and the others came through World War II unharmed. Then, in 1954, Capa stepped on a land mine in Indochina. He died. Paul Schutzer was killed in the Negev desert during the Six-Day War in 1967. Four years later, Larry Burrows lost his life when his helicopter was attacked over Laos.

Eisenstaedt, who died in 1995 at the age of 96, told me, "I never photographed a war, thank goodness. I can't look at blood, and I suffer when I see dirty people and misery." However, in 1933 he photographed Joseph Goebbels, the Nazi minister of propaganda, and the picture casts a spell more than 70 years later. The fierce arrogance of power, normally covered by a false grace of good humor, shone through miraculously onto Eisenstaedt's film. Such pictures convinced *Life*'s creators that photographs themselves could tell the story, not merely adorn or illustrate it—a core belief that attracted an extraordinary group of photographers to the

ALL: LIFE; DAVID DOUGLAS DUNCAN; LARRY BURROWS; MARGARET BOURKE-WHITE; ALFRED EISENSTAEDT; PP. 84, 85 RALPH CRANE

ALLAN GRANT



BOB LANDRY; ALFRED EISENSTAEDT; GJON MILI; GORDON PARKS

magazine. (A dozen years later, Eisenstaedt took what would become *Life*'s most published photograph: an iconic shot of a sailor embracing a woman in Times Square on the surrender of Japan in World War II.)

Early *Life* photographers took advantage of improvements in photographic technology that were then being introduced. When high-speed film emulsions and new small, precision-made Leica and Contax cameras came on the market, photographers could record human activity in normal room light for the first time. In 1935, a soon-to-be *Life* photographer named Thomas McAvoy took a series of pictures of President Franklin D. Roosevelt as the press gathered at his desk. There the great man is: coughing, joking, signing papers. Since no one expected that photographs could be taken in such dim light, they didn't think much of McAvoy's camera. Not long after the pictures appeared, candid photography was banned in the Roosevelt White House.

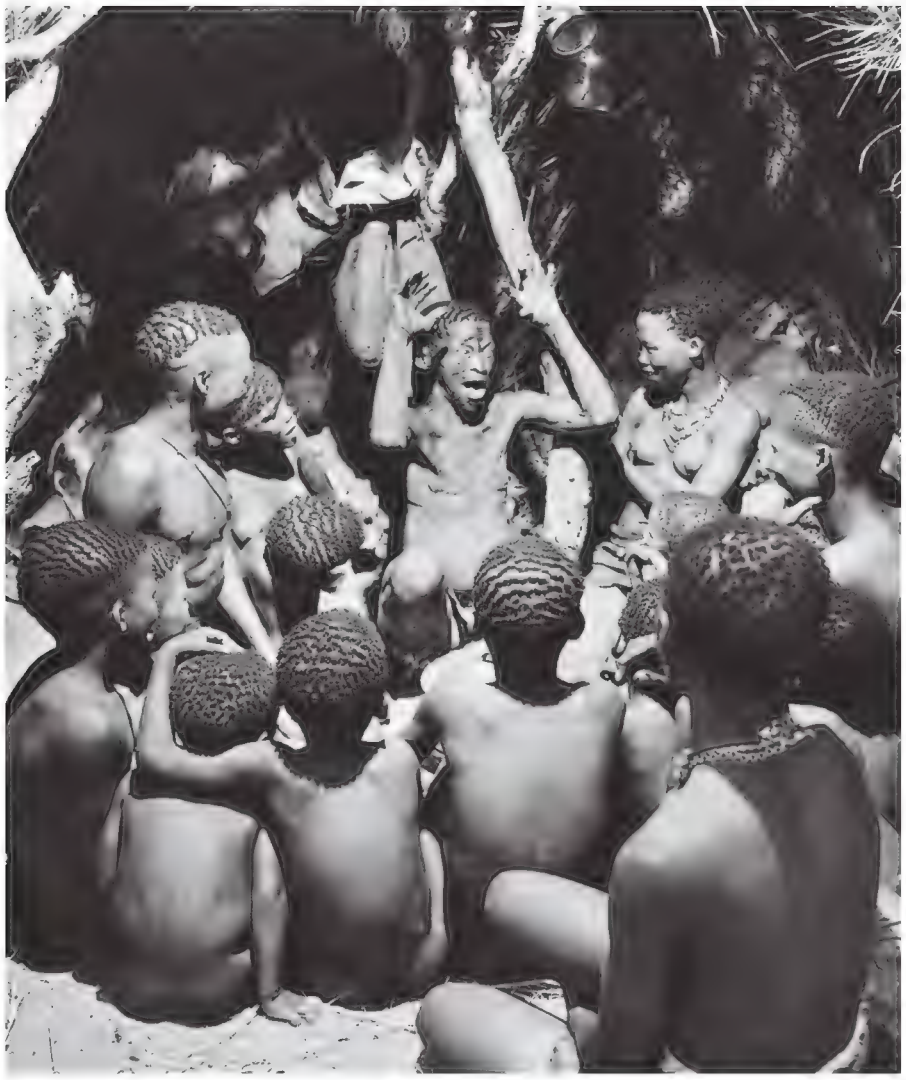
But starting the next year, the extraordinary, instant popularity of *Life*—destined to be the country's bestselling weekly magazine—would open doors and give photographers license to photograph the way people actually lived. In 1948, to use just one year as an example, Leonard McCombe spent the better part of a month recording the life of a young woman beginning a career at an advertising agency; Gordon Parks gained the trust of members of a street gang in Harlem; and W. Eugene Smith followed the daily rounds of a country doctor—Ernest Ceriani of Kremmling, Colorado, population about 1,000—at a time when such general practitioners still did occasional surgery.

Much of a *Life* photographer's energy was spent trying to remove from the scene any trace of his or her presence. We most often focused on human expression and gesture. These might be coaxed from a subject but never demanded. Most often, it was simply a matter of waiting. Subjects became bored. Their minds turned to things they found more intriguing than the photographer sitting in the corner. Snap!

In its photojournalism, the magazine had a symbiotic relationship with radio. Radio's nationwide audience heard the news but could not see it. *Life* filled that void—as quickly as was possible.

Clockwise, from top left: When Sid Grauman mashed "the Great Profile" John Barrymore's great profile into the wet concrete of Grauman's Chinese Theatre in Hollywood in this 1940 photograph by Bob Landry, the actor said: "I feel like the face on the barroom floor." Alfred Eisenstaedt, the diminutive dean of *Life* photographers, became friends with Sophia Loren, who was filming *Madame Sans-Gêne* in Rome when this photograph was taken in 1961. Loren said she liked Eisenstaedt "because he reminds me very much of my obstetrician." In 1963, photographer Gordon Parks needed permission from Nation of Islam leader Elijah Muhammad to photograph followers, including Muhammad's daughter Ethel Sharieff (who died in 2002 at the age of 80). "The first thing [Muhammad] asked me," recalled Parks, "was, 'Why you working for the white devils?'" In 1949, artist Pablo Picasso was intrigued when photographer Gjon Mili, who had studied electrical engineering at the Massachusetts Institute of Technology and helped pioneer the use of strobe lights, showed him a photograph he had taken of a skater leaping in the dark with lights on the skates. Using a penlight, Picasso "drew" a centaur for Mili in the darkness of a pottery workshop in Vallauris, France. Below: Dmitri Kessel photographed the Shah of Iran's lavish coronation on October 26, 1967. The shah's crown and that of his wife held more than 5,000 diamonds.

ALFRED EISENSTAEDT; W. EUGENE SMITH; DMITRI KESSEL



N. R. FARBMAN; WALLACE KIRKLAND; MARK KAUFFMAN; EDWARD CLARK

Later, when radio got pictures and became television, the largely black-and-white *Life* had a problem. In the 1960s, at great expense, the editors decided to combat television by using more color. Burrows, in Vietnam, began the first extended coverage of war in color. Eliot Elisofon, for one, had been exploring the emotive qualities of color for years and had advised movie director John Huston on its use for the 1952 film *Moulin Rouge*. As a result, he became the color specialist, often called when the editors were seeking more color stories.

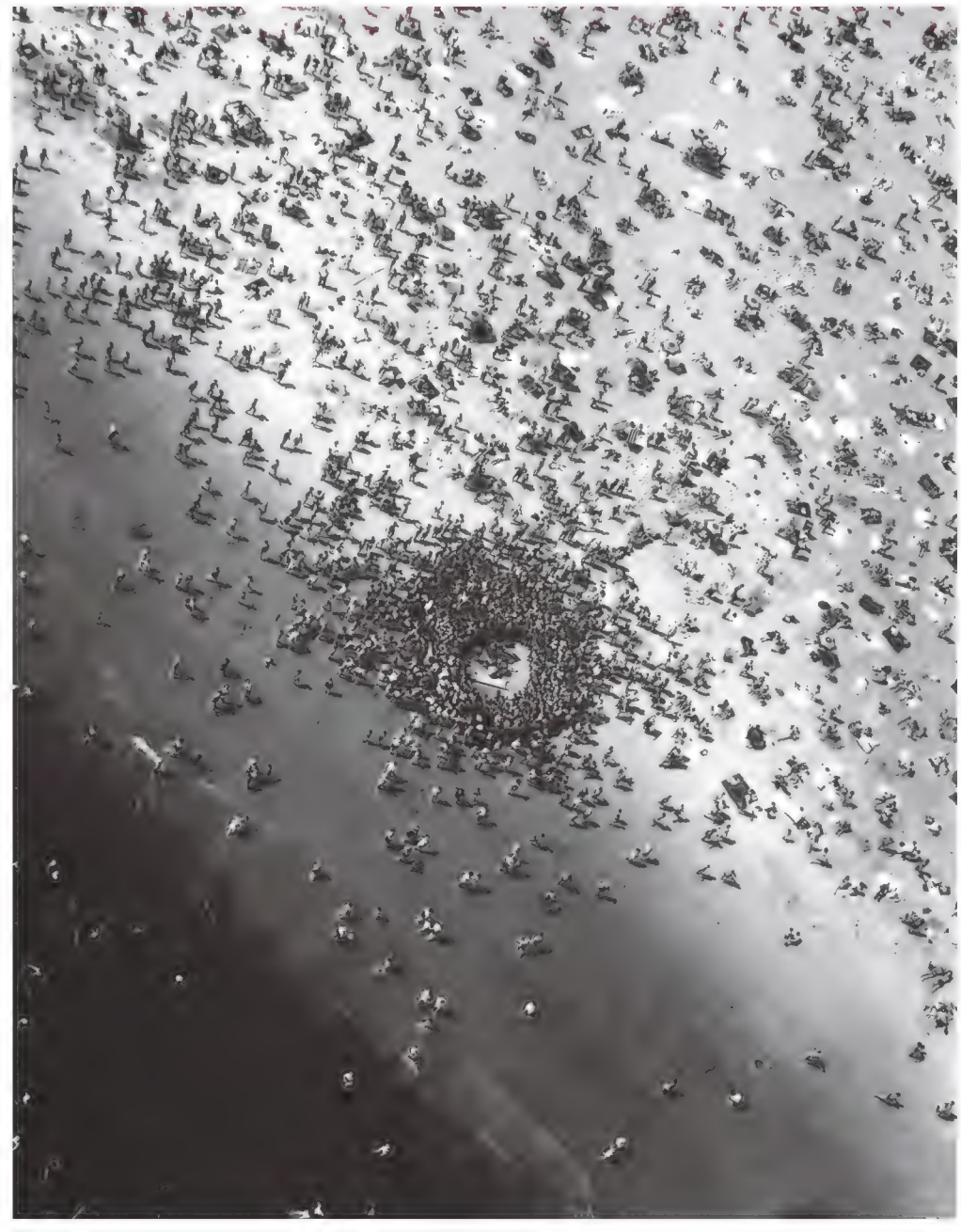
That sort of pigeonholing happened all the time. Dmitri Kessel once used a colleague's experience—and his own—to explain: "[Eisenstaedt] took a picture of a dog lifting his leg. Then, because he took that famous picture, when they have a story about Niagara Falls, they say, 'Ah, water,' and they think of him." For his part, Kessel had photographed Hagia Sophia, the famous basilica in Istanbul, in 1949. "They came again to a church, and they said, 'Ah, Dmitri Kessel'. . . . Whenever there was a church, I would do it."

The photographer as artist? Well, most photojournalists see too much of the world to take themselves that seriously. Ed Clark, who unforgettably captured a nation's sorrow over the wartime death of Franklin Roosevelt, put his journalistic success this way: "I don't know what made a good picture. I never did know. I made a lot of them. But I never did figure that out." At *Life*, it wasn't necessarily the photographer's job to produce pictures that were artistic, but to make ones that were striking, even unforgettable. If they were beautiful too, so much the better.

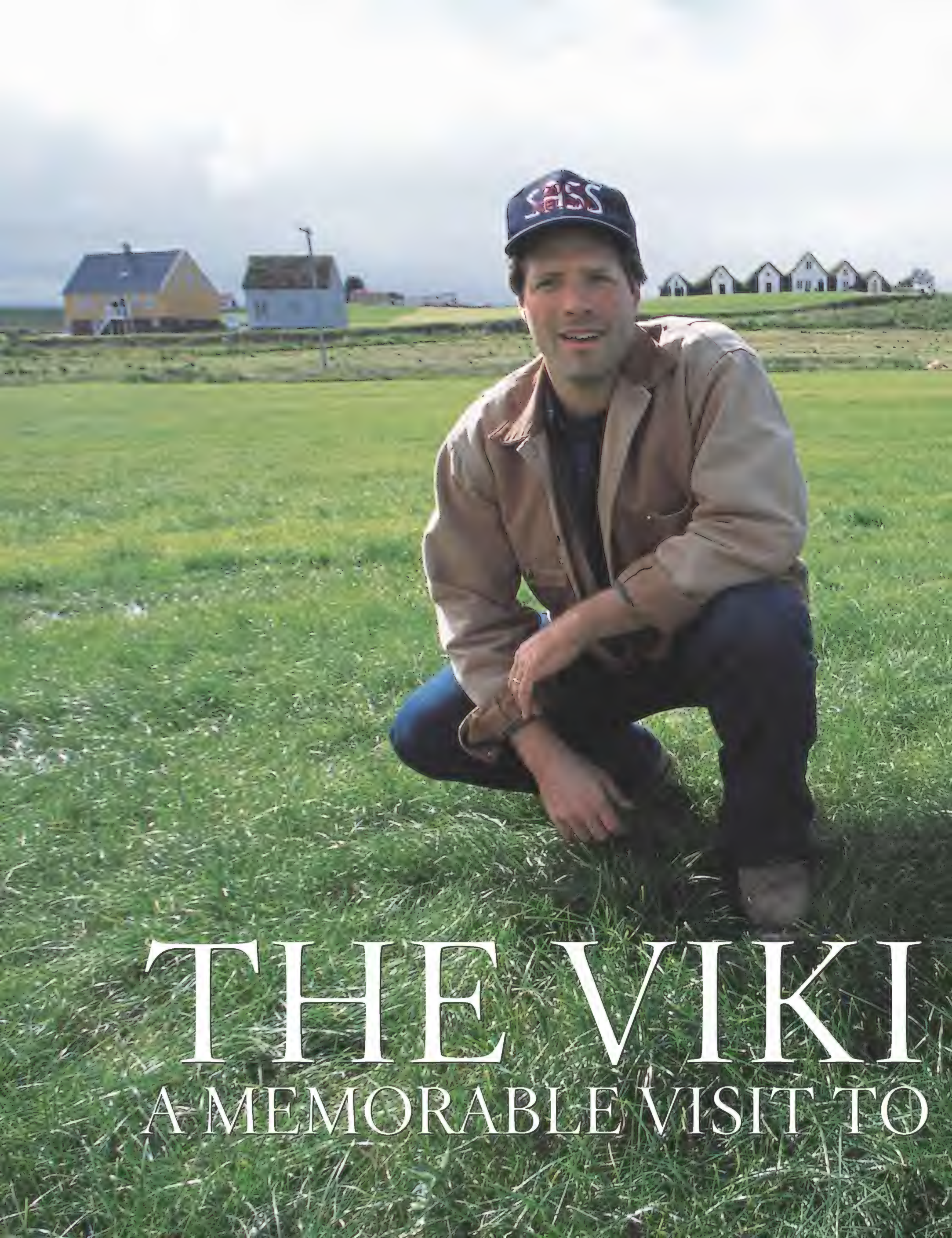
And often they were. The best work of any one of the photographers who worked for *Life* is remarkable. The best work of the best of them is as good as any photograph ever made.

JOHN LOENGARD, a Life *photographer for five decades, was also its picture editor from 1973 to 1987.* Life *ceased weekly publication in 1972 and monthly publication in 2000. It was revived in October 2004 as a Friday newspaper supplement.*

Below: Margaret Bourke-White, one of *Life*'s original four staff photographers, took this 1952 photograph of a crowd gathered around Mary Eschner, a Coney Island bather who nearly drowned, from a helicopter. While shooting other pictures from the air, Bourke-White had her own scare: her Navy chopper made a crash landing into the Chesapeake Bay. Bourke-White died in 1971 at age 67. Opposite, clockwise from far left: Photographer N. R. Farbman and correspondent Don Burke drove more than 600 miles through the Southern Kalahari desert for a 1947 article on the Bushmen, one of the first pictorial documentations of the tribe. Wallace Kirkland captured the moment when Jane Dill of Northbrook, Illinois, learned in the spring of 1954 that a new saliva test indicated her next child would be the girl she wanted. But, *Life* noted, the process left "most scientists profoundly skeptical." Dill turned out to be one of only about half of the test subjects to get an accurate result. Edward Clark took this 1954 photograph of what *Life* called the "world's youngest swimmer," 9-week-old Julie Sheldon of Los Angeles, through an underwater window. On a 1952 campaign stop in Providence, Rhode Island, policemen cleared a path for Mamie Eisenhower, the candidate's wife, and, as it happened, for photographer Mark Kauffman (who had taken his first *Life* cover—of Eleanor Roosevelt—in 1939, when he was 16).



LARRY BURROWS; EDWARD CLARK; MARGARET BOURKE-WHITE



THE VIKI

A MEMORABLE VISIT TO

Exploring the New World a thousand years ago, a Viking woman gave birth to what is likely the first European-American baby. The discovery of the house the family built upon their return to Iceland has scholars rethinking the Norse sagas

BY EUGENE LINDEN

PHOTOGRAPHS BY SCOTT S. WARREN

NGS AMERICA

ROUGHLY 1,000 YEARS AGO, the story goes, a Viking trader and adventurer named Thorfinn Karlsefni set off from the west coast of Greenland with three ships and a band of Norse to explore a newly discovered land that promised fabulous riches. Following the route that had been pioneered some seven years before by Leif Eriksson, Thorfinn sailed up Greenland's coast, traversed the Davis Strait and turned south past Baffin Island to Newfoundland—and perhaps beyond. Snorri, the son of Thorfinn and his wife, Gudrid, is thought to be the first European baby born in North America.

Thorfinn and his band found their promised riches—game, fish, timber and pasture—and also encountered Native Americans, whom they denigrated as *skraelings*, or "wretched people." Little wonder, then, that relations with the Natives steadily deteriorated. About three years after starting out, Thorfinn—along with his family and surviving crew—abandoned the North American settlement, perhaps in a hail of arrows. (Archaeologists have found arrowheads with the remains of buried Norse explorers.) After sailing to Greenland and then Norway, Thorfinn and his family settled in Iceland, Thorfinn's childhood home.

Just where the family ended up in Iceland has been a mystery that historians and archaeologists have long tried to clear up. In September 2002, archaeologist John Steinberg

"By dumb luck," says UCLA's John Steinberg (opposite), he unearthed a house that may have been built by one of the most storied Vikings. The find may help sort fact from fantasy in the ancient sagas, which tell of sea voyages to America.

ISLANDIA.
THORFINN KARLSEFNI'S LONGHOUSE
ERIK THE RED'S FARMSTEAD
THE VIKING PARLIAMENT
Occidens.
Orientis.
ILLVSTRISS. AC POTENTISS. REGI FREDERICO II DANIAE, NORVEGIAE, SLAVORVM, GOTHORVMQVE REGI, ETC. PRINCIPI SVO CLEMENTISSIMO, ANDREAS VELLEIVS DESCRIBEB. ET DEDICABAT.

It was in 874 that Vikings, fleeing taxes and other burdens, first settled in Iceland (a 16th-century map). By the year 1000, Vikings there numbered 70,000 and, contrary to their reputation as lawless brigands, had established one of Europe's first parliaments.

of the University of California at Los Angeles announced that he had uncovered the remains of a turf mansion in Iceland that he believes is the house where Thorfinn, Gudrid and Snorri lived out their days. Other scholars say his claim is plausible, although even Steinberg admits, "We'll never know for sure unless someone finds a name on the door."

The location of Thorfinn's family estate in Iceland has surprisingly broad implications. For one thing, it could shed new light on the early Norse experience in North America, first substantiated by Helge Ingstad, an explorer, and his wife, Anne Stine Ingstad, an archaeologist. In 1960, they discovered the remains of a Viking encampment in Newfoundland dating to the year 1000. But the only accounts of how and why Vikings journeyed to the New World, not to mention what became of them, are in Icelandic sagas, centuries-old tales that have traditionally vexed scholars struggling to separate Viking fantasy from Viking fact. Steinberg's find, if proved, would give credence to one saga over another.

By Steinberg's admission, he found the imposing longhouse—on the grounds of one of northern Iceland's most visited cultural sites, the Glaumbaer Folk Museum—"by dumb luck." For decades, visitors had gazed upon the field in front of the museum, unaware that evidence of one of the grandest longhouses of the Viking era lay just beneath the grass.

STEINBERG DID NOT START OUT trying to insert himself into a debate about Viking lore, but to survey settlement patterns during Viking times. With his colleague Doug Bolender of Northwestern University in Chicago, he had developed a method for using an electrical conductivity meter to detect buried artifacts. The tool—a cumbersome, 50-pound apparatus usually used to identify contaminated groundwater and locate pipes—sends alternating current into the ground. The current induces a magnetic field, and the tool then measures how the magnetic field varies according to the makeup of the soil and the objects buried in it. The two men fitted the electronic equipment into a 12-foot-long plastic tube and trekked around fields holding the apparatus by their sides, looking for all the world like slow-motion pole vaulters getting ready to vault.

The two first worked with Icelandic archaeologist Gudmundur Olafsson, who was excavating the site of Erik the

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EUGENE LINDEN's latest book is The Octopus and the Orangutan: More True Tales of Animal Intrigue, Intelligence, and Ingenuity. *SCOTT S. WARREN lives in Durango, Colorado.*

ROYAL GEOGRAPHICAL SOCIETY, LONDON, UK / BRIDGEMAN ART LIBRARY; P. 93 GRANGER COLLECTION

Red's farmstead in western Iceland and had identified it as the place from which some of the explorers of the New World first set out. There, Steinberg and Bolender charted magnetic anomalies—possible signatures of buried walls and floors of turf houses. Then, Steinberg says, "Gudmundur would draw upon his knowledge of ancient Norse houses to imagine possible configurations underground so that we could refine the search." By the end of 2000, Steinberg and Bolender could survey a field as quickly as they could walk.

An 18-person team they put together then settled on Skagafjord, on the north coast of Iceland, as the most promising place to conduct their studies. The area is dotted with rills, rivers and thousand-year-old fields green from the abundant rain and long, soft sunlight of summer days in the Far North. The territory was ideally suited to their technology, layered as it is with known volcanic deposits that coincide with important historical events, enabling the archaeologists to get a good fix on the ages of objects they found. "See, the soil reads like a book," Steinberg says, standing in a trench on a farm near Glaumbaer that was the site of northern Iceland's most powerful estate during Viking times. He points to a green layer that marks a volcanic eruption in 871, a blue layer from one in 1000 and a thick, yellow layer from yet another in 1104.

Steinberg (in Iceland this past summer) wields an electric gauge in search of evidence of buried structures. The researchers' trenches confirmed the presence of a longhouse (below), lain hidden for centuries, right in front of a folk museum.

In the summer of 2001, Steinberg and his colleagues scanned the low fields in Glaumbaer. The work proceeded uneventfully until late August, when the team was about to pack up and leave. ("You always find the most important things in the last week of a field season," says Steinberg.) When two undergraduates probing spots that showed low conductivity in earlier scans pulled up their first plug of earth, they looked in the hole and saw a layer of turf—consistent with a turf house—below a yellow layer that marked the eruption of Mount Hekla in 1104.

Excited, Steinberg returned in 2002 to dig a series of trenches. By the end of that season, the team had uncovered parts of what appeared to be an extensive longhouse, 100 feet by 25 1/2 feet. By the end of 2004, the team had plotted the direction and length of one of the walls. The house was so large that it evidently belonged to someone with wealth and power. But who?

ALL THE DETAIL about Norse trips to Vinland (as the Norse called North America) comes from two accounts: *The Saga of Erik the Red* and *The Saga of the Greenlanders*. These epic Viking tales were probably first written down around 1200 or 1300 by scribes who either recorded the oral stories of elders or worked from some now-lost written source, says Thor Hjaltalin, an Icelandic scholar who oversees archaeological activities in northwest Iceland. The two sagas give similar accounts of Thorfinn's trip to the New World, but they differ on some significant details about his return to Iceland. In Erik the Red's saga, Thorfinn moves back to his family estate in Reynisnes, while in the Greenlanders' saga, Thorfinn settles down in Glaumbaer, after his mother proves less than welcoming to his wife. In a key passage from the Greenlanders' saga, Thorfinn sells some of his Vinland spoils in Norway, then comes to "north Iceland, in Skagafjord, where he had his ship drawn ashore for the winter. In the spring he purchased the land at Glaumbaer and established his farm there." It goes on: "He and his wife, Gudrid, had a great number of descendants, and a fine clan they were. . . . After [Thorfinn's] death, Gudrid took over the running of the household, together with her son Snorri who had been born in Vinland."

Apart from the grand scale of the longhouse, which ties it to someone of Thorfinn's stature, other evidence links it to the North American expedition, Steinberg claims. Its straight-walled design differs from the bowed-wall construction typical of Icelandic longhouses of the era, and it

TOP RIGHT: JOHN STEINBERG; BOTTOM: JEANNETTE C. BOND / CALIFORNIA STATE UNIVERSITY NORTHRIDGE

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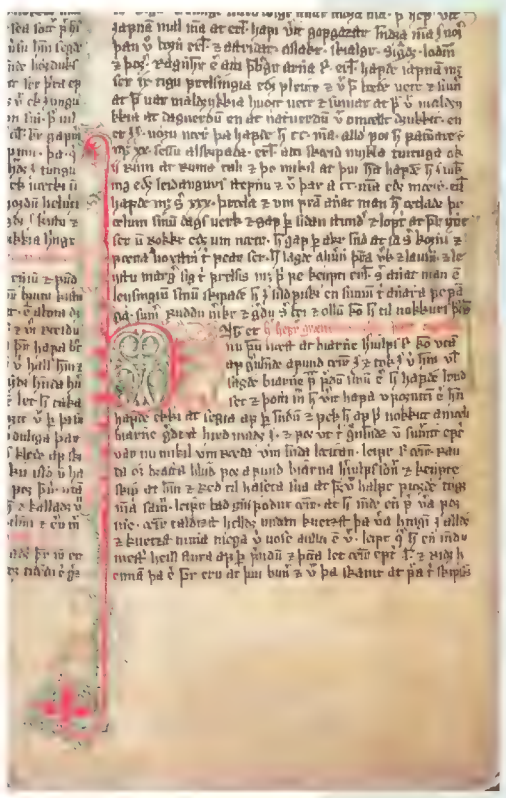
bears a strong resemblance to structures that have been uncovered in L'Anse aux Meadows in Newfoundland. And finally, Steinberg says, it's unlikely that any other chief could build one of the grandest longhouses of the Viking era and not be mentioned either in the sagas or other sources.

Before Steinberg's find, conventional wisdom held that Erik the Red's version was more credible and that the reference to Glaumbaer in the Greenlanders' saga was merely a flourish, added years after most of the saga was written, to improve Gudrid's image and perhaps that of a Glaumbaer chief. There are still many points of dispute about which Norse did what and where in North America, but if Steinberg's find is indeed Thorfinn's house, the long-discounted Greenlanders' saga, which names Thorfinn as a primary source, becomes the more accurate version—at least on the matter of where Thorfinn and company ended up. So after he found the longhouse, Steinberg called Olafsson—who had identified Erik the Red's farmstead as a jumping-off place for the New World—and blurted, "I think I've found the other end of your story."



The turf house found by Steinberg supports the Greenlanders' saga's (a 14th-century manuscript) version of Thorfinn's return to Iceland.

VIKINGS SPREAD OUT from Scandinavia and settled in Iceland, which Steinberg describes as "one of the world's last large inhabitable islands to be inhabited," in 874. They were led by local chiefs who did not like taking orders from, or paying taxes to, Harald Finehair, a Norse king then consolidating power in Norway. As the celebrated Norwegian anthropologist Vilhemmer Stefansson wrote in 1930, the Viking expansion was perhaps "the only large scale migration in history where the nobility moved out and the peasantry stayed home."

At first, Iceland offered a paradise to these ruggedly independent Vikings. The lowlands had forests of birch and other trees that had never felt the ax. In just 60 years the population jumped from zero to 70,000. By 930, the Norse had established one of the world's first parliaments, the *Althing*, where chiefs met to settle disputes.

There was just one sore point to this idyllic life. Settled and organized though they might have been, the Vikings were also some of the toughest warriors who ever lived. A slighted Norse was not the type to turn the other cheek. The resulting bloody duels reverberated far beyond Iceland. As Stefansson put it in 1930, writing during Prohibition, "The eventual discovery of North America hangs upon a fashionable practice of the day, that of man-killing, which, like cocktail shaking in the later America, was against the law but was indulged by the best people." He was referring to a few un-

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Freydis: Heroine or Murderer?

Viking scholars have long debated the veracity of the Icelandic sagas. Are they literature or history—or both? The two conflicting versions of Freydis Eriksdottir, who was Erik the Red's daughter and the half sister of Leif Eriksson and who traveled to North America 1,000 years ago, are a case in point.

In Erik the Red's saga, Freydis and her husband Thorvard accompany Thorfinn Karlsefni and Gudrid Thorbjarnardottir on their journey to the New World. When Natives attack their small colony, the Norse men run off. But a pregnant Freydis stands her ground, shouting: "Why do you flee from such pitiful wretches, brave men like you? . . . If I had weapons, I am sure I could fight better than any of you." She snatches up a sword from a fallen Norseman and exposes a breast (presumably to indicate that she's a woman), frightening off the attackers. When the danger had passed, Thorfinn "came over to her and praised her courage."

But in the Greenlanders' saga, Freydis is a murderer. Freydis and her husband do not travel with Thorfinn and Gudrid, but instead undertake an expedition with two Icelanders, known as Finnbogi and Helgi. When they arrive in Straumfjord (thought by some scholars to be the site in Newfoundland known as L'Anse aux Meadows), they quarrel over who will live in the longhouses Leif Eriksson has left behind. Freydis wins, rousing the Icelanders' resentment. After a hard winter in which the two camps become more estranged, Freydis demands that the Icelanders hand over their larger ship for the journey home. She goads her husband and followers into murdering all the male Icelanders. When no one will kill the five women in the Icelanders' camp, she takes up an ax and dispatches them herself. Back in Greenland, word of the incident seeps out. "Afterwards no one thought anything but ill of her and her husband," concludes the story of Freydis' expedition.

Was Freydis a heroine? Or a homicidal maniac? Archaeologist Birgitta Linderoth Wallace, who directed much of the excavation of L'Anse aux Meadows, doesn't know for sure. "We try to sort out what's fact and fiction," she says. "We can't presume the saga writers knew the difference. What we do know is the writers were often anonymous—and male. They were Christian priests. Freydis was a pagan, while Gudrid was Christian. Gudrid's descendants were bishops and had an interest in making her appear as holy as possible and Freydis as bad as possible, for contrast." Wallace says the murder of the Icelanders is hard to believe. "Something bad happened," she says. "But can you imagine killing 35 Icelanders without all their relatives coming over to take revenge?"

—*BARBARA SJOHOLM*

BARBARA SJOHOLM is the author of The Pirate Queen: In Search of Grace O'Malley and Other Legendary Women of the Sea *(Seal Press)*.

Why Didn't They Stay?

The Viking presence in North America had dwindled to nothing long before Columbus began island hopping in the Caribbean. Why did the Norse fail where other Europeans succeeded? After all, Vikings were consummate seamen and peerless raiders who populated marginally inhabitable Greenland and who would push their way into the British Isles and France. And with their iron weapons and tools, they had a technological edge over America's indigenous peoples.

Several explanations have been advanced for the Vikings' abandonment of North America. Perhaps there were too few of them to sustain a settlement. Or they may have been forced out by American Indians. While the European conquest was abetted by infectious diseases that spread from the invaders to the Natives, who succumbed in great numbers because they had no acquired immunity, early Icelanders may not have carried similar infections.

But more and more scholars focus on climate change as the reason the Vikings couldn't make a go of it in the New World. The scholars suggest that the western Atlantic suddenly turned too cold even for Vikings. The great sailing trips of Leif and Thorfinn took place in the first half of the 11th century, during a climatic period in the North Atlantic called the Medieval Warming, a time of long, warm summers and scarce sea ice. Beginning in the 12th century, however, the weather started to deteriorate with the first *frissons* of what scholars call the Little Ice Age. Tom McGovern, an archaeologist at Hunter College in New York City, has spent more than 20 years reconstructing the demise of a Norse settlement on Greenland. In the middle of the 14th century, the colony suffered eight harsh winters in a row, culminating, in 1355, in what may have been the worst in a century. McGovern says the Norse ate their livestock and dogs before turning to whatever else they could find in their final winter there. The settlers might have survived if they had mimicked the Inuit, who hunted ringed seal in the winter and prospered during the Little Ice Age.

With sea ice making the routes from Iceland to Greenland and back impassable for Norse ships for much of the year, the Little Ice Age probably curtailed further Norse traffic to North America. Iceland also fared badly during this time. By 1703, weather-related food shortages and epidemics of plague and smallpox had reduced Iceland's population to 53,000, from more than 150,000 in 1250.

It's worth pondering how the history of the West might have differed if the weather had remained balmy. Norse populations in Iceland and Greenland might have flourished, and the Vikings might have remained in North America. If the temperature had been a few degrees higher, some of North America might be speaking Norse today.

—EUGENE LINDEN

reconstructed manslayers like Erik the Red, who overtaxed even the Norse tolerance for conflict and was exiled more than once by his fellow chiefs. Erik was first forced to relocate to Iceland's west coast and was then banished from the island altogether.

According to the sagas, Erik eventually set up a farmstead on the west coast of Greenland. The incongruous name for this barren, frigid island dominated by a vast ice cap comes from the outcast's attempt to lure other settlers, demonstrating "a genius for advertising that made him prophetically American," Stefansson wrote. Erik heard tales of strange lands to the west from a Norse sailor blown off course en route to Greenland, and it was his son Leif who led the first expedition to the New World. Another was led by Erik's son Thorvald (who died in Vinland from an arrow wound). Thorfinn Karlsefni led a third.

Thorfinn's assumed lineage is distinguished: one ancestor was Aud the Deepminded, a queen from the British Isles, and another was Ugarval, a king of Ireland. Thorfinn had grown up in Iceland on a farm not far from Glaumbaer. A wealthy merchant notorious for his cleverness, Thorfinn was also a good leader. On a trading voyage to Greenland, he met and married Gudrid Thorbjarnardottir, the beautiful and charismatic widow of Erik's son Thorvald. (A history of Iceland written around 1120, as well as scattered church records, back up the genealogies and dates in the sagas.) During the winter of 1005 at Brattahlid, Erik's manor in Greenland's eastern colony, Thorfinn played board games and planned his trip to Vinland. Erik the Red's saga makes the planning sound boisterous and somewhat haphazard, noting that various other Norse chiefs decided to join the expedition seemingly on the spur of the moment.

Thorfinn Karlsefni (whose statue is in Philadelphia) gets as much ink in the sagas as Leif Eriksson.

While Leif Eriksson is the Viking name most familiar to Americans, the sagas devote as much space to Thorfinn and his voyage. Steinberg's discovery supports a long-held theory that Thorfinn was the principal teller of the sagas. (That would explain why he plays such a major role in them.) Steinberg notes that knowing the source of a text helps historians weigh the assertions.

Whoever their author was, the stories have challenged scholars to match the place names mentioned in them to real topography. For example, Thorfinn called two crucial places where he and his group camped in the New World Straumfjord (stream fiord) and Hop (lagoon) and described the first as having strong currents. Scholars

FRANKO KHOURY / FAIRMOUNT PARK ART ASSOCIATION

Vikings settled in L'Anse aux Meadows at the northern tip of Newfoundland around 1000 (a reconstructed house at the site), but didn't stay long. Harsh weather, conflicts with Native Americans, or stretched supply lines may have sent them back to Iceland.

have variously located Straumfjord, where Snorri was born, in Buzzards Bay, Massachusetts; Long Island Sound; the Bay of Fundy; and L'Anse aux Meadows (the Norse site discovered by Helge and Anne Ingstad on the northern tip of Newfoundland). Different advocates have placed Hop near New York City, Boston and points north.

If in fact Thorfinn and company traveled as far south as Gowanus Bay in New York Harbor, as asserted by the British scholar Geoffrey Gathorne-Hardy in 1921, they would have sailed past some of the greatest stands of primeval hardwoods on the planet, not to mention grapes—treasured by Norse chiefs who cemented their status with feasts accompanied by copious amounts of wine—and unlimited fish and game.

Why would the Norse have abandoned them or similar inducements farther north? Perhaps the Vikings' Vinland was like Alexander the Great's India: a land of fabulous wealth so far from home that it was beyond the limits of his ability to impose his will. Both Norse sagas have Thorfinn beating a retreat north after some humbling battles with Native warriors. (See "Why Didn't They Stay?")

THORFINN never went back to Vinland, but other Norse subsequently did. Evidence continues to accumulate that Norse traded with both Inuit and more southern tribes for skins, and that they regularly brought back wood and other items from the New World. Over the years, various accounts have placed Norse colonies in Maine, Rhode Island and elsewhere on the Atlantic Coast, but the only unambiguous Norse settlement in North America remains L'Anse aux Meadows.

Icelanders, for their part, need no persuading of the Viking's preeminence among Europeans in the New World. Asked who discovered America, 8-year-old Kristin Bjarnadottir, a third grader in Holar, Iceland, answers with complete confidence: "Leifur," naming the celebrated Viking explorer. She and other Icelandic kids often play a game called Great Adventurer, in which they take on the roles of the saga heroes. Steinberg's ongoing investigation of the turf house in Glaumbaer and other structures could well give Kristin and her friends rich new exploits of their Viking ancestors to act out.

WOLFGANG KAEHLER / CORBIS

In Vilnius, Lithuania, preservationists are creating a living memorial to the nation's 225,000 Holocaust victims

BY VIJAI MAHESHWARI

PHOTOGRAPHS BY CHRIS ANDERSON

VILNIUS REMEMBERS

BEHIND A PHALANX of grimly featureless Stalinist-style buildings east of Pylimo—the central boulevard bisecting Vilnius, Lithuania's capital—lie a derelict playground and rutted basketball court. Several teenage boys, shirtless, wearing baggy shorts and high-tops, dribble a ball, lazily. A child rocks in a wooden swing nearby. Next door, a sagging chain-link fence surrounds a cinder block kindergarten. The spires of Baroque churches, rising from the hills beyond, shimmer in the summer's haze in this tiny (about the size of West Virginia) Baltic republic of three and half million people. Lithuania, today a parliamentary democracy, broke from the Soviet Union in 1990; in March of this year, along with Estonia and Latvia, the country joined NATO; in May, the Baltic states joined the European Union.

The semi-deserted downtown lot evokes a vanished world for Rachel Margolis, 83, one of a handful of survivors from the Vilnius Ghetto, where about 100,000 of the country's 240,000 Jews were living at the outset of World War II. "This was where the Great

A treasure house of Baroque and Rococo architecture, the city center (detail, above) contains a centuries-old quarter (right) where a Jewish community of 100,000 flourished.

Synagogue was," she says, gesturing toward the schoolhouse. "And that [the basketball court] was the heart of the Jewish Quarter. It was once a crowded, busy neighborhood of narrow streets with artisan shops and kosher eateries."

Margolis leads the way into the courtyard of a red brick, two-story house, typical of the quarter, that dates to the 17th century. An ornately carved wooden balcony extends along one wall. The Moorish-style tile roof features a serrated border of bricks. "This is classical Northern European Jewish architecture," she says. "It's one of the last courtyards left pretty much untouched." Margolis crossed into this walled enclosure for holidays with her parents and brother. "It was dirty and cramped, but so, so alive," she says.

Rachel Margolis, one among only a handful of survivors from the prewar Vilnius Ghetto, recalls a street life lost to history. "It was once a crowded, busy neighborhood of narrow streets with artisan shops and kosher eateries," she says. "It was so, so alive."

She is one of perhaps 200 survivors from Lithuania's once-thriving Jewish community who remained in the country after World War II. (Today she spends part of each year in Israel.) Ninety-four percent of the nation's Jews died in the Holocaust; only about 15,000 escaped annihilation. Some 70,000 were shot at Paneriai, a wooded hamlet six miles outside the city where today a Soviet-era granite obelisk stands, dedicated to the "Victims of the Fascist Terror." The dead include Margolis' parents, Samuel and Emma, and brother, Juzef, killed there in the last days of the Nazi occupation in July 1944, just days before the Red Army entered Vilnius.

Today, Margolis—along with other members of the city's Jewish community, numbering perhaps 4,000—has begun an ambitious effort to restore the central core of the prewar ghetto. As envisioned, the reconstituted precinct will celebrate Lithuania's once-flourishing center of Eastern European Jewish culture.

The task of preserving this heritage, virtually obliterated under the Nazis and then suppressed by the Soviets, is well under way. In 1986, Margolis began organizing a small Holocaust museum, the Green House, so named because it is located in a green shingle-sided residence in downtown Vilnius. Today, it is an annex of the Vilna Gaon Jewish State Museum, which opened in 1989 on Pylimo Street. This past October, a gallery of Lithuania-related Jewish art, featuring works by artists from the 18th to the 20th centuries, was inaugurated.

THE GENOCIDE IN VILNIUS extinguished a culture that spanned 700 years and produced, in the 20th century alone, such figures as violinist Jascha Heifetz and sculptor Jacques Lipchitz. On the eve of World War II, the city boasted more than 100 synagogues, six daily Jewish newspapers and an extraordinary concentration of Jewish theaters, schools, guilds and political groups. The foremost center of rabbinical learning in Europe, it was known as the Jerusalem of the North; today, preservationists have appropriated that designation as a rallying cry.

Margolis, who escaped the Vilnius Ghetto with a band of partisans just days before the Nazis liquidated it in September 1943, chose to return to Soviet Lithuania after the war, she says, to live in the place that held memories of the family she had lost. The museum she envisioned has its origins in the scores of photographs and documents she collected secretly during the Soviet occupation. Outside the simple, intimate memorial stands a stone sculpture of a menorah; the monument honors diplomat Chiune Sugihara, a figure often referred to as the Japanese Oscar Schindler. (Schindler, a German industrialist, rescued some 1,100 Jewish laborers working in his factory by bribing the SS.) Assigned to the Japanese consulate in wartime Lithuania, Sugihara issued more than 2,000 exit visas for Jews fleeing the Nazis throughout Eastern Europe. Many of those whom Sugihara aided eventually made their way to Japanese-held Shanghai and to Japan, and from there reached South America and elsewhere.

> "We were quite wealthy then, and well-educated," says Rachel Margolis. "But it didn't do us much good, did it?"

The exhibits in Margolis' museum include a 1937 daguerreotype of her own extended family, taken when she was a teenager. The men wear dinner jackets; the women, who include a demure, pigtailed 16-year-old Rachel, are dressed in evening gowns. "We were quite wealthy then, and well-educated. But it didn't do us much good, did it?" she asks, running a hand through her short silver hair.

EMMANUEL ZINGERIS, 48, a former member of Parliament, is the primary driving force behind the plan to rebuild parts of the destroyed Jewish Quarter and to reconstruct the Great Synagogue, a gargantuan Baroque structure built

VIJAI MAHESHWARI is a freelance writer living in Prague. Vilnius journalist LIUDAS DAPKUS contributed to this article. Photographer CHRIS ANDERSON is based in New York and Paris.

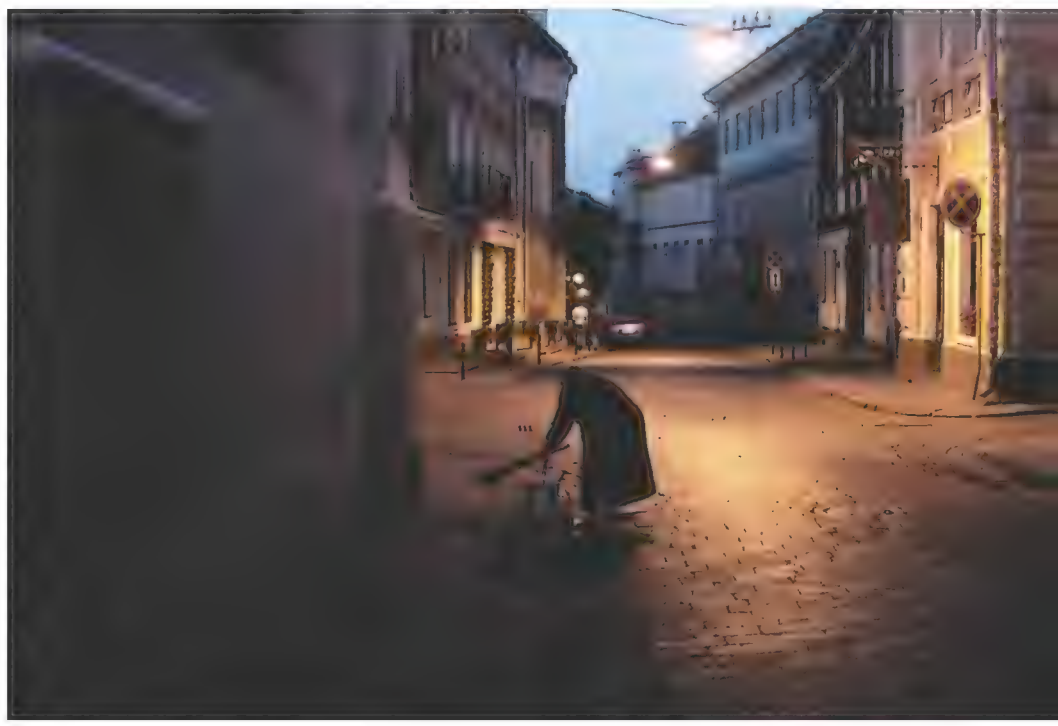
P. 100 VILNIUS CITY MUNICIPALITY

From the 1700s, the center of rabbinical learning in Europe was concentrated in Vilnius, Lithuania, at the crossroads of Eastern Europe and Russia (map, right). Today Vilnius' Old City (including its Jewish Quarter, below) is a UNESCO World Heritage Site.

in the 1630s that also contained a library and an institute of Talmudic studies. *Luftwaffe* bombers damaged it during air raids on Vilnius; from 1955 to 1957, the Soviets leveled what was left of the structure. "We must show the world what a great center of Jewish culture and learning this city once was," Zingeris says, pacing his offices at the organization he founded, the Tolerance Center, dedicated to "restoring links between pre-war and present-day Lithuania, lost during decades of intolerance." The center opened this October in a prewar building where a Yiddish theater was once housed. "Vilnius was vibrant, cosmopolitan, a breeding ground for genius," he says, as he leads the way up a flight of stairs to an airy attic, where the newly opened gallery of Jewish art is housed. Reeling off a list of artists, "Chaim Soutine, Jacques Lipchitz, Samuel Bak, Mark Antokolsky, Marc Chagall . . . " he dodges between pillars gleaming with freshly applied coats of white paint. "Money, money," he mutters. "That's always the problem. But we managed to get it done." The enterprise cost about $4 million, mostly funded by the European Commission.

In October, too, the center opened a permanent exhibition, "The Lost World," an evocation of pre-World War II life in Jewish Vilnius. Says Zingeris: "We did not want to shock visitors [by displaying] Holocaust images. The tragedy can be presented another way: by showing the cultural legacy which Lithuania lost when almost its entire Jewish population was wiped out."

Zingeris grew up hearing about this world from his mother, Paulina, who was taken to the Stutthof concentration camp in Poland, but escaped during a forced march as the Germans retreated in 1944. But he never fully grasped its long and rich history until, as a university student researching an assignment, he came upon archives of the city's Yid-



MIKE REAGAN

dish newspapers. In their pages he found coverage of a lively arts and political scene, and advertisements for Jewish theater performances, including Shakespeare in Yiddish. "It struck me," he says, "that we were not merely talking about an ethnic group. This was a rich civilization in its own right."

Zingeris, once dismissed as a dreamer, saw his ideas gain currency after Lithuanian prime minister Algirdas Brazauskas apologized in 1995 to the Israeli Parliament for his country's complicity in the Holocaust. In 2000, the Parliament authorized reconstruction of portions of the former Jewish Quarter and the rebuilding of the Great Synagogue.

"Lithuania lost a huge part of its life and cultural heritage with the Holocaust," says Justas Paleckis, formerly the deputy foreign minister, who now represents Lithuania in the European Parliament. "It's very, very important to rebuild the Jewish Quarter and right the wrongs of the past." Paleckis admits that the project could also boost tourism and bring in much-needed foreign revenues. In 1999, traveling with a delegation of Lithuanian officials, he visited the Jewish quarters of Prague in the Czech Republic and Krakow in Poland. "The Jewish Museum in Prague is the most popular museum in the city. And this in a capital which boasts numerous historic sites." It is his hope, he says, "that soon, many of the tourists who visit those places will also include Vilnius in their itinerary."

Emmanuel Zingeris (above, left) has spearheaded a restoration project (a computer-generated visualization, below). But Jewish-community leader Simon Alperovitch (above, right) criticizes the plan. "There's too few of us to start acting grandiose," he says.

It's already beginning to happen. Visitors from around the world have begun coming to the old city center of Vilnius, a treasure house of architectural styles like 17th- and 18th-century Baroque and Rococo. In 1996, a Lithuanian travel agency, West Express, began offering guided tours focusing on Jewish Vilnius. "We have visitors from countries including the United States, Israel, South Africa and Germany," says Julius Fishas of West Express. "Some come here to see the country of their parents' childhood, others because they are interested in the world of Lithuania's Jews, who were nearly wiped off the earth within a couple of years."

With the government now backing reconstruction plans, several Lithuanian architectural firms, relying upon archival photographs and old maps of Vilnius, have been drawing up blueprints and competing for the right to manage the project. One firm, the Archinova Design Center, has already won a contract to begin work on a section of the Jewish Quarter; construction is scheduled to begin this winter. "This is a historic opportunity to restore the face of old Vilnius," says architect Antanas Svildys of Archinova, who is overseeing the project.

Research conducted by his firm has revealed that the Soviets took some surprising and, as it turns out, fortuitous shortcuts during reconstruction of the Old City, from 1960 to 1985. "When ruined houses were demolished, the cellars were left intact," says Giedre Miknevichiene, an architect from the Institute of Monument Restoration in Vilnius. "I've spoken to the builders of the kindergarten [the site of the Great Synagogue], and they claim the basement was not touched at all. Hebrew inscriptions on the walls, even some menorahs, have survived."

Officials hope that discovery will make the restoration project more attractive to investors. Planners envision converting the basements into underground exhibition spaces, while building modern structures above. A number of entrepreneurs—including Americans and Israelis—have agreed to finance the project in return for the right to erect hotels, office space and restaurants on upper floors. The scheme also calls for ground floors to be transformed into replicas of the artisan studios and shops that once lined the streets. "Nowhere in the world," says Paleckis, "have Jewish houses been rebuilt from scratch. This is a pioneer project."

The undertaking will require a massive, sustained fundraising effort. According to Zingeris, reconstructing 30 buildings will cost about $140 million, plus another $14 million to rebuild the 10,000-square-foot Great Synagogue.

Not everyone embraces the project. Some critics say it

BOTTOM: ARCHINOVA/L. K. BAKANANSKAS

Vilnius' Jewish district (where cobblestone streets, above, led to the 17th-century Great Synagogue, right) was called the Jerusalem of the North. The Nazis killed some 225,000 Lithuanian Jews (symbolized by victims' shoes at the Jewish State Museum).

TOP: VILNA GOAN JEWISH STATE MUSEUM (2)

The heart of the Jewish district (now a gentrified neighborhood, above) bears little trace of its rich history. Says former deputy minister Justas Paleckis: "Lithuania lost a huge part of its heritage [in] the Holocaust. It's important to right the wrongs of the past."

draws attention away from a more important mission—fostering a religious and cultural revival. "Our goal is not to rebuild lifeless buildings but to bring people closer to Judaism," says American rabbi Sholom Krinsky, who has spent ten years in Vilnius as head of the orthodox Chabad Lubavitch Cultural Center. "There's been a double Holocaust here, first Nazi and then Soviet, and many of the surviving Jews know little or nothing about their religion, not even the significance of the Jewish holidays," he says. "The Soviets did not like anyone, no matter their religion, thinking about God."

"This is a historic opportunity," says architect Antanas Svildys, "to restore the face of old Vilnius."

Simon Alperovitch, 76, president of the Jewish Community of Lithuania, is also critical of Zingeris' ambitious plans. "There's too few of us to start acting grandiose," he says in his cramped and dusty office dominated by a large portrait of the Gaon of Vilnius, a famous Talmudic scholar from the 18th century. Alperovitch believes that the emphasis on buildings only stirs residual anti-Semitism. "The dialogue between Jews and Lithuanians is still very painful," he says. "The rest of Lithuania is still very Catholic and conservative," he adds.

But Sharunas Liekis, executive director of the Yiddish Institute at Vilnius University, says that despite the carping, the project will go forward. "Vilnius was a pretty fractious town before the war, with Zionists, Communists and Imperialists all vying with each other," he says. "These petty disagreements are quite normal."

But even before the reconstructed Jewish Quarter becomes a reality, visitors to Old Town can glimpse the city's grim history. A handful of dingy courtyards have remained unchanged for the past hundred years. Here and there, among the glitzy bars and luxury hotels that are beginning to spring up in Old Town, one catches a glimpse of a charred Star of David on an exposed brick wall. From houses along Zemaitijos Street, once a main thoroughfare and now just around the corner from the new Jazz Rock Café, Jewish partisans, armed with pistols they pieced together from melted-down wristwatches, fired on Nazi troops storming the streets. "The Nazis blew up those houses later, and Wittenburg [the leader of the resistance] was handed over to be shot," Margolis says. "But at least someone was brave enough to fight back instead of just waiting dully for his death." She adds: "Write this down so that the world knows."

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PETER PAN TURNS 100

But the boy who never grew up shows no signs of getting old

BY NORMAN ALLEN

SINCE HIS DEBUT a century ago, he has graced the stage in innumerable productions around the world and the screen in a classic animated Disney feature and live-action movies. His image is used to sell peanut butter and cross-country bus trips. He even entered the ranks of Greek tragedy when he joined Oedipus and Electra in having his name linked with a psychological syndrome. Peter Pan may remain forever young, but he has evolved over the course of a turbulent century, journeying far from the dark imaginings of author James Matthew Barrie.

It was two days after Christmas 1904 that Peter Pan first flew onto the stage of the Duke of York's Theatre in London in the play that bore his name. There, for the first time, an enchanted public met the three Darling children, their canine nurse, Nana, the Lost Boys and an evil Captain Hook fleeing a crocodile that had swallowed a clock. When Tinker Bell lay dying and Peter asked the audience to clap their hands to save her life, members of the orchestra were ready to oblige if the public declined. It proved an unnecessary precaution.

After pre-opening rumors of imminent disaster, the play became a surprise hit of the Christmas season, and it would make an annual holiday return for years to come. Its origins lay in the influence of five little boys on Barrie's complex imagination. Over the years, as *Peter Pan* has become both a classic tale and a cultural touchstone, scholars and artists have studied Barrie's creative relationship with the sons of Arthur and Sylvia Llewelyn Davies. Their friendship is the subject of the new movie *Finding Neverland*, starring Johnny Depp as Barrie in a Hollywood version of the often tragic story behind one of the century's most popular works of children's literature.

Barrie was born at the foot of the Scottish Highlands in 1860

"The horror of my boyhood was that I knew a time would come when I also must give up the games," wrote Barrie (above, in 1900 at age 40), author of the magical tale (opposite, Peter and Wendy in a 1907 illustration).

HULTON ARCHIVES / GETTY IMAGES; P. 109 ALICE B. WOODWARD / MARY EVANS PICTURE LIBRARY

Barrie's devotion to the five Davies boys (Peter, far right, and Jack and George in a 1901 photograph by Barrie) inspired him to create *Peter Pan*. The boys' mother, Sylvia Davies (below, in 1890 at age 24), called the writer "the best friend in the whole world."

in Kirriemuir, a town of weavers. Resting above the placid slopes that stretch to the North Sea, Kirrie, as it is known by the locals, lies between two wilderness glens that reach into the very heart of the mountains. Barrie was deeply influenced by his mother's stories of the region's past. He was exceptionally ambitious. When he was a boy, a Kirrie neighbor taught him a poem with the lines, "What can I do to be for ever known, / And make the age to come my own?" Years later, Barrie admitted it was an apt description of his own youthful striving. He received his degree from Edinburgh University in 1882, landed his first job as a writer with the *Nottingham Journal* in 1883, and arrived in London two years later, ready to risk all as a freelance writer. His tales of Scotland, inspired by his mother's memories, caught on. Kirriemuir, rechristened as Thrums, was soon beloved by readers of prestigious British publications such as the *National Observer* and *St. James's Gazette*.

Two collections of the Kirriemuir stories, *Auld Licht Idylls* and *A Window in Thrums*, brought Barrie modest literary recognition, but the publication in 1891 of *The Little Minister*, about a gypsy lass and the diminutive minister who loves her, placed him in the top ranks of British novelists. Robert Louis Stevenson wrote to Barrie from Samoa in 1892: "I am a capable artist; but it begins to look to me as if you are a man of genius. Take care of yourself for my sake. It's a devilish hard thing for a man who writes so many novels as I do, that I should get so few to read. And I can read yours, and I love them."

By 1892, Barrie was also becoming a popular playwright. A young actress named Mary Ansell took a leading role in his *Walker, London*, and in 1894 she married its author. Adapting *The Little Minister* for the stage in 1897 cemented Barrie's rep-

NORMAN ALLEN's play, The Light of Excalibur, *premièred this past October at the Kennedy Center in Washington, D.C.*

ANDREW BIRKIN COLLECTION (2)

utation as a playwright, both in London and on Broadway.

That year, on a stroll through Kensington Gardens, Barrie made the acquaintance of 5-year-old George and 4-year-old Jack Llewelyn Davies. The fascination was mutual. The boys found a childlike adult in the midst of stodgy Victorian England, and Barrie—who lived with his wife and a Saint Bernard named Porthos in London's fashionable Gloucester Road—found a rapt audience for his fanciful tales, which transformed the vast London park into a fairyland. His audience grew over the following decade as George and Jack were joined by three younger brothers.

Peter Pan made his first appearance in Barrie's 1902 novel, *The Little White Bird*, which centers on a wealthy older man who befriends a young couple and their growing son. The elderly gentleman tells the boy of an infant named Peter Pan, just 7 days old, who roams the paths of Kensington Gardens and has the ability to fly. Like the Pan of Greek mythology, this Peter is a happy-go-lucky child, playing on his pipes and enjoying life. But the Peter of the novel is a mere precursor of the character in the play. As Peter evolved in Barrie's mind, he became the central character of a new drama, that of a boy who lives out his adventures in Never Land,

When *Peter Pan* opened in December 1904, *The (London) Times*' critic proclaimed it "a thing of pure delight." But George Bernard Shaw said the play "was foisted on children by the grown-ups." And another writer lamented, "Oh, for an hour of Herod!"

where childish imaginings are made real in the person of pirates, Indians and mermaids—and no one grows old. There the Darling children—Wendy, Michael and John—must decide whether to remain forever young or face the responsibilities of maturity. When they finally say goodbye to Peter, they also say goodbye to childhood itself.

Barrie credited the Davies boys as his inspiration. "I suppose I always knew that I made Peter by rubbing the five of you violently together, as savages with two sticks produce a flame," Barrie wrote in a preface to the published play in 1928. "That is all he is, the spark I got from you."

Barrie's relationship with the entire family was a close one. When the boys' father, Arthur, was diagnosed with cancer in June 1906, Barrie helped him through the illness until he succumbed in 1907. Focusing his attention on the boys and their widowed mother, Barrie neglected his own marriage, ultimately sending his wife into the arms of another man. When the adulterous affair became known, Mary Barrie insisted on divorce rather than reconciliation. Two days after the marriage was dissolved, in 1909, Sylvia Llewelyn Davies was herself diagnosed with cancer. Less than a year later she left her sons—now ranging in age from 6 to 17—orphaned and Barrie bereft.

Named their legal guardian, "Uncle Jim" became provider and mentor. He had taken a flat, high above the Thames, after his divorce, and it now became a second home for the boys. Barrie led them on fishing vacations in Scotland and sojourns to the Continent, and he saw them enrolled at Eton, Oxford and other leading schools. (I have found no evidence to support the speculation that his attraction to the boys was unhealthy or inappropriate. Nicholas, the youngest of the five, wrote in his 70s that "I'm glad I lived with that odd little man rather than living in poverty, or, for that matter, with virtually any other person I have ever known.")

The Davies boys' saga was far from charmed. George, the eldest, was killed in France during World War I. Michael, a budding poet particularly close to Barrie, drowned near Oxford in 1921 while still an undergraduate. In 1960, a long-depressed Peter Llewelyn Davies, the third oldest of the boys, threw himself before a London subway train. "'Peter Pan' Ruled a Suicide," one headline put it. (Jack had died of emphysema a year earlier, and Nicholas, the youngest, succumbed to the same disease in 1980.) In a notebook entry just after Michael's death, Barrie wrote, "It is as if long after writing 'P. Pan' its true meaning came to me—Desperate attempt to grow up but can't."

Barrie's literary output lessened significantly after Michael Davies' death. His last work for the stage, *The Boy David* (1936), tells the biblical story of David, Jonathan and King Saul. It closed after only 55 performances. Four months later, Barrie, a longtime smoker (an early work was titled *My Lady Nicotine*), died of pneumonia in London at the age of 77.

Though he had drawn parallels between Peter Pan and himself, Barrie was in at least one important way Peter's opposite. He sought out responsibility, taking on the cares of others. He'd met explorer Robert Scott at a dinner party and formed a close friendship, becoming godfather to Scott's son. Two and a half years later, when Scott lay freezing to death in the Antarctic, it was to Barrie whom he wrote, asking him to watch over his wife and son. Lady Cynthia Asquith, Barrie's personal secretary and one of his closest friends in later life, wrote in her *Portrait of Barrie*, "His face continued to impress me as the most adult, the most experienced, I had ever seen, and each glance at the photograph of that six-years-old boy in braided and frogged velveteens . . . confirmed my

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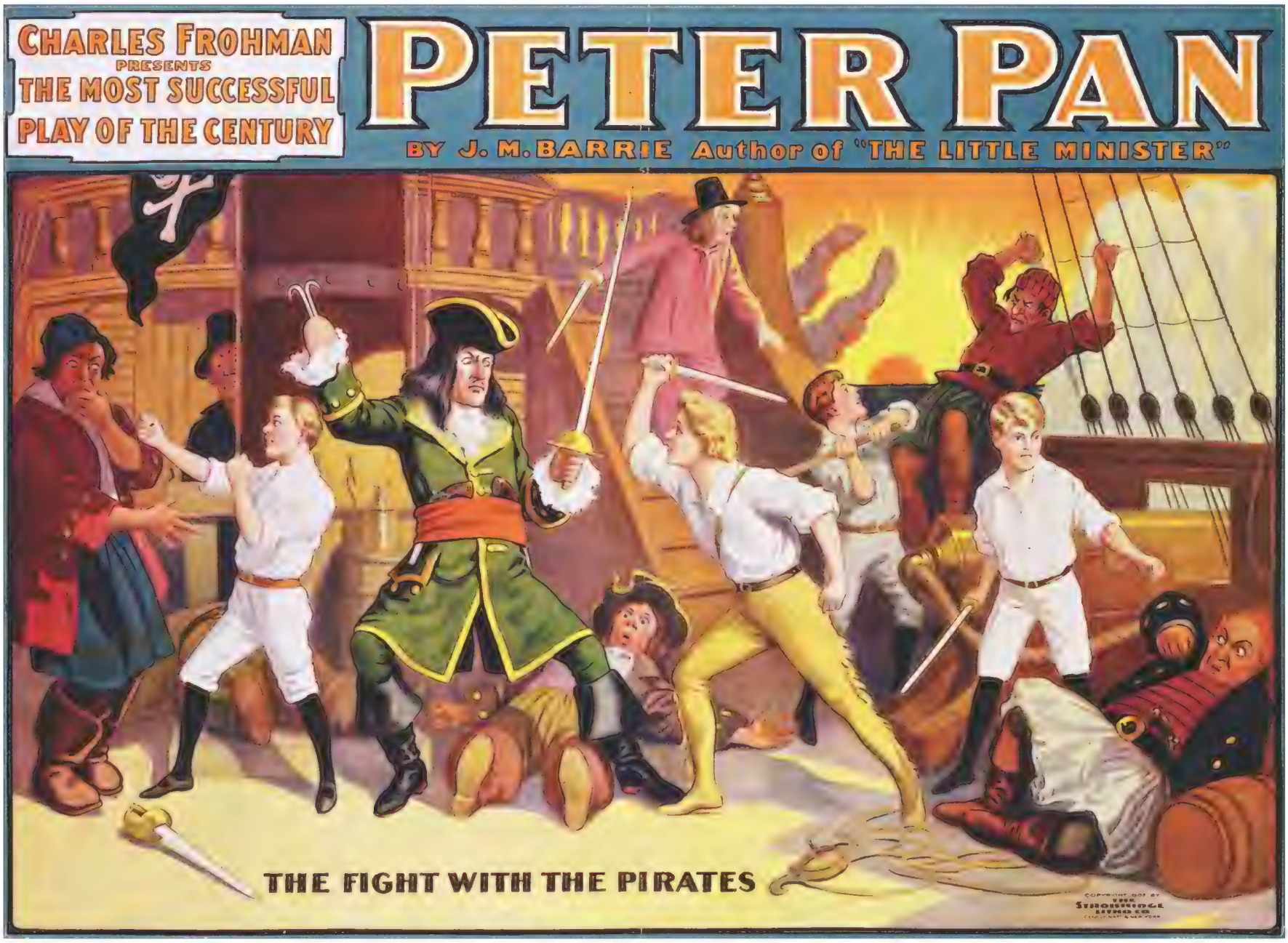
CHARLES FROHMAN
PRESENTS
THE MOST SUCCESSFUL
PLAY OF THE CENTURY
PETER PAN
BY J. M. BARRIE Author of "THE LITTLE MINISTER"
THE FIGHT WITH THE PIRATES
COPYRIGHT 1907 BY THE STROBRIDGE LITHO CO.

Barrie had called his drama *Peter & Wendy*, then *The Great White Father*. The play's producer, Charles Frohman, an American, suggested the title that stuck. After the London première, Frohman's business manager cabled him: "LOOKS LIKE A BIG SUCCESS."

suspicion that the creator of Peter Pan had been a case, not of arrested, but of precipitated development."

PETER PAN HAS TRAVELED A LONG WAY in 100 years. Barrie's official biographer, Denis Mackail, wrote in *The Story of J.M.B.* that Nina Boucicault, the first actress to play Peter, was "[n]ot beautiful. Or you don't think so for a minute or two. But then her voice and movements do rather more than the trick. If Barrie writes something that raises a slight shudder in print, Miss Boucicault only has to say it and your heart turns over three times while tears trickle from your eyes."

Even before Boucicault was cast in the role, Barrie had his eye on American actress Maude Adams, who had already made a success of *The Little Minister* on Broadway. Initially he pictured her in the part of Wendy, but producer Charles Frohman convinced him to give her the title role. "I have written a play for children, which I don't suppose would be much use in America," Barrie wrote to Adams in 1904. Wendy "is rather a dear girl with ever so many children long before her hair is up and the boy is Peter Pan in a new world. I should like you to be the boy and the girl and most of the children and the pirate captain." Casting Adams as Peter meant that a woman also had to be cast in the London première—and so a tradition was established that would continue for the better part of the century.

Barrie's trust in Adams turned out to be well placed. "All New York may not believe in fairies," the *New York Times* reported of the November 1905 opening of *Peter Pan* on Broadway, "but there was no doubt last night, when Tinker Bell was dying, that the audience . . . irrespective of age or condition, had gotten back very near to second childhood."

No less an authority than Mark Twain added his two cents. "It is my belief that *Peter Pan* is a great and refining and uplifting benefaction to this sordid and money-mad age," he wrote in a letter to Adams: "The next best play on the boards is a long way behind it as long as you play Peter."

Adams returned regularly to the role for more than a decade, touring with near-missionary zeal. "How splendid all the accounts of your Peter are," wrote Barrie, who never saw her in the role himself. "I feel sure you are the most entrancing little boy that ever was by sea or shore, and I hear things you do in the part which are so absolutely what Peter did that it makes me gay. There never was such a girl as you for finding out what her author was up to."

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Adams returned the compliment. "My childhood and girlhood had been spent with older people, and children had always been rather terrifying to me," she wrote in a series of reminiscences gathered in Phyllis Robbin's *Maude Adams: An Intimate Portrait*. "When one met the eyes of the little things, it was like facing the Day of Judgment. Children remained an enigma to me until, when I was a woman grown, Peter gave me open sesame; for whether I understood children or not, they understood Peter."

In fact, Barrie had aimed the play—and his novelization of it, *Peter and Wendy,* published in 1911—at adults as well as children, and the original theatrical presentation contained a range of emotional experience that was often missing over the passing decades. Both the Disney film, released in 1953, and the Broadway musical that opened in 1954 omit a line central to Barrie's vision. Peter, faced with the prospect of drowning in Mermaid's Lagoon, declares: "To die will be an awfully big adventure." Sandy Duncan, who starred in a 1979 revival of the musical, said that the death-as-adventure line was briefly reinstated during a pre-Broadway tour. "We were coming into New York with the show," Duncan recalled, "and our producers came to see it and they said, No. The line was too dark for family audiences. That line, though, is the heart of the play."

Cathy Rigby, the former Olympic gymnast, recalls that in the 1990 revival in which she starred on Broadway, Peter's seemingly eager acceptance of death *was* included. "Back then it was a little bit much, but certainly nowadays the children don't have a problem with that," she said in an interview from her home in Southern California. In Rigby's interpretation, it's not a fascination with death that Peter experiences, but a "way of making something good out of something tragic," she explained. "'I'm going to make this an adventure,' he says."

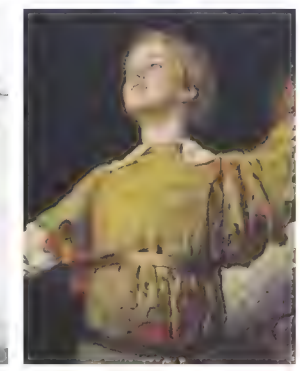
THE MUSICAL VERSION of Barrie's play, which became a vehicle for both Duncan and Rigby, also gave new life to Peter Pan himself when it opened on Broadway back in 1954. It redefined the character and enshrined him in the memories of American audiences. The production, directed and choreographed by Jerome Robbins, owed much to a score that included lyrics by Betty Comden and Adolph Green and music by Jule Styne. But it was Mary Martin's legendary performance opposite Cyril Ritchard's foppish Captain Hook that made this *Peter Pan* a pleasure. Indeed, the show was tailored for her. The operatic "Oh, My Mysterious Lady" was inserted to highlight the star's coloratura range. The part of Liza, maid to the Darling family, was enhanced for Martin's daughter, Heller Halliday. The pivotal reference to death was removed, and the loneliness of a boy trapped in youth was altogether forgotten in the star's simple embodiment of Peter's blissful persona.

In her autobiography, *My Heart Belongs*, Martin wrote: "Peter Pan is perhaps the most important thing, to me, that I have ever done in the theater. I cannot even remember a

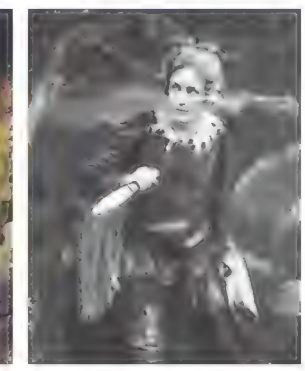
Peter Principals

Partly because of restrictions on the use of child actors and partly because the producer and playwright wanted to cast the star Maude Adams in the title role for the U.S. opening, Peter Pan was originally played by a woman—a tradition that would hold for decades. Barrie's favorite Peter? Pauline Chase.

Nina Boucicault, 1904



Maude Adams, 1906



Pauline Chase, c. 1907

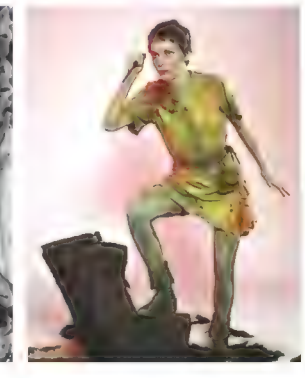
Edna Best, 1925

Eva Le Gallienne, 1928

Jean Arthur, c. 1930

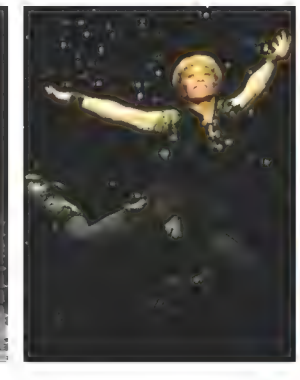
Mary Martin, 1955

Hayley Mills, 1969

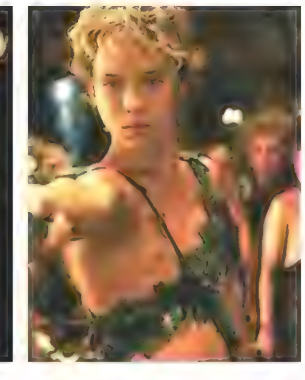


Mia Farrow, 1976

Sandy Duncan, 1979



Cathy Rigby, 1998



Jeremy Sumpter, 2003

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day when I didn't want to be Peter. When I was a child I was sure I could fly. In my dreams I often did, and it was always the same: I ran, raised my arms like a great bird, soared into the sky, flew."

Martin's portrayal was joyous—and pervasive. She swept into American living rooms through live television broadcasts in 1955 and 1956 and a taped production, which debuted in 1960 and was rebroadcast sporadically into the early 1970s. Her performance reigned supreme until Sandy Duncan's phenomenal success in the role. Duncan holds the record for portraying Peter on Broadway, with no fewer than 551 performances. "The director and I really committed to doing it as a boy," Duncan says today. "Before that it was always a woman playing the part. Mary did it as a leading lady." Duncan, the mother of two sons, says, "There's a great vulnerability in young males, more than in young women. . . . They have such an innocence that you know is going to be lost and you can't do anything about it."

Rigby, who returned to the role this October, taking the show to 29 cities in what is billed as the 100th Anniversary Tour, says her performance has changed over the years. "I'm trying to continually make the character more an authentic child," she said. "A little boy came up to me at the St. Louis Muny, which is this enormous theater. 'You were great,' he said, 'and I really like what you did, but now that I'm close I can see you have wrinkles.' No adult would do that. . . . "

Late in life, Barrie (left, in 1925 at age 65) became increasingly reclusive after tragedy struck two of the grown Davies boys. A new movie (Johnny Depp as the young Barrie) attests to enduring interest not only in Peter Pan but in his complex creator as well.

THE PLAY'S OTHER CHARACTERS have made their own mark over the century. Gerald du Maurier was the first actor to assay the role of Hook. His daughter, Daphne du Maurier, author of *Rebecca*, remembered a sinister villain very different from the caricature portrayed in the Disney film or the Broadway musical. "Children were carried screaming from the stalls," she wrote in *Gerald: A Portrait*. "And even big boys of twelve were known to reach for their mother's hand in the friendly shelter of the boxes."

Wendy, with more spunk and courage than brothers Michael and John, also stands in the ranks of classic characters. (Some critics have speculated that Barrie based the character on his mother.) Even her name broke new ground. It originated as Barrie's transcription of a young admirer's lisping, mispronounced nickname for him, "Friendy," and became a fad. In 1954, Roger Lancelyn Green, author of the encyclopedic *Fifty Years of Peter Pan*, noted that out of "all the thousands of Wendys alive today, not one is more than fifty years old."

Lately, Peter Pan's metamorphosis seems only to have accelerated. In Steven Spielberg's 1991 movie *Hook*, Robin Williams played a grown-up, fumbling Peter to Dustin Hoffman's title villain. An animated Disney production, *Return to Never Land*, appeared in 2002. Last year, director P. J. Hogan conjured a live-action feature film actually titled *Peter Pan* starring Jeremy Sumpter as Peter. It returned in a large degree to Barrie's original vision, depicting a self-involved and sometimes lonely boy, isolated from the world by his gift of eternal youth.

The new movie about Barrie, *Finding Neverland,* distorts some key facts—it kills off Arthur Llewelyn Davies before Barrie even meets the family—but it will probably reignite interest in the writer and his work. (For an insightful exploration of Barrie and the boys who inspired him, nothing rivals Andrew Birkin's *J.M. Barrie and the Lost Boys*, recently reissued by Yale University Press.)

Most of Barrie's writings have faded into the shadows. In the play *Dear Brutus*, written in 1917, strangers gathered at a country house are offered a second chance at life, but each tragically repeats his or her critical mistake. *Mary Rose* (1920) is a haunting play about a mother lost in the Scottish Hebrides. She returns home, unaged, to find her infant son grown into a swaggering soldier.

Only *Peter Pan* has stood the test of time. It is Peter who will forever soar through the windows of the Darling nursery, creating himself anew for each generation. Perhaps it is flight that makes him so appealing; certainly it is flight that so elated his interpreters. "I wish I could express in words the joy I felt in flying," Mary Martin wrote. "I loved it so. The freedom of spirit—the thing Peter always felt—was suddenly there for me. I discovered I was happier in the air than on the ground." Cathy Rigby described the experience in words that Barrie would surely appreciate. "You have to remember to bring your harness," she said, "because when you're up there you don't even know you have it on, or that there's a wire on you. It feels like a giggle that starts at your toes and becomes a complete feeling of freedom and joy and danger."

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Treasure Quest

For more than a decade, American Robert Graf has combed the waters of a Seychelles island for a multimillion-dollar booty stashed by pirates nearly 300 years ago ~ BY MICHAEL BEHAR

I'VE BEEN TREADING water in a small, man-made lagoon for about half an hour, waiting for Robert Graf to surface. The 49-year-old American treasure hunter has cordoned off this rectangular swath of Indian Ocean in the Seychelles, and now he's somewhere 25 feet below, chiseling off chunks of granite and sucking up sand and grit with a four-inch-wide vacuum dredge. He's searching for the entrance to a stone vault that he believes contains a pirate hoard—part of what many consider the largest high-seas heist in history—stashed nearly 300 years ago. Back then, locals speculate, the area where we're swimming was dry land, the sea held back by a sand berm later destroyed in a storm.

Graf, a former U.S. Air Force technical instructor, breathes through a 50-foot-long bright pink hose attached to an air tank on shore. He wears a face mask, a tattered wet suit and 26 pounds of lead weight strapped to his waist. Every so often I dunk my head, peering through my mask into impossibly blue water. At one point a faint shadow glides over the bottom, then vanishes into a dark ravine. Moments later there's a creepy scraping sound, like someone prying open the lid of a sarcophagus.

Graf pops up on the other side of the lagoon. "I have maybe three or four feet to go," he shouts. "But I'm running out of air." The noise I heard was Graf trying to move several granite slabs, which he says appear to have been hewn by hand and stacked in a kind of capstone. He'll be back again tomorrow with a fresh air tank, and the day after that too. Off and on for 15 years he has been hauling up stone and sand in search of the prize he's

"I know I'm right," insists Graf (in the lagoon he has dredged for his search on a Seychelles island). "I'm 100 percent confident that my calculations are correct."

"I tried to get into the mind-set of the pirates," says Graf. "I had this dream, and every single morning for two or three weeks I'd wake up wondering 'What does this single dot on the rocks mean?'"

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confident lies beneath the waters of this rocky beach on Mahé, the largest of the 115 granitic and coralline islands that form the Seychelles.

Historians believe that cached somewhere in this far-flung archipelago are the plunders of Olivier Le Vasseur, aka La Buse, or the Buzzard, a French pirate who roamed the Indian Ocean during the early 1700s. In 1721, La Buse, along with English pirate John Taylor and their crews, ransacked the *Nossa Senhora do Cabo*, a Portuguese frigate undergoing repairs near Mauritius, about 1,000 miles south of the Seychelles. The *Cabo* carried gold, uncut diamonds and church regalia belonging to the retiring viceroy of Goa. At the time, Goa was a Portuguese colony on the west coast of present-day India. La Buse and Taylor made off with the treasure—then valued at more than a million pounds sterling—and divided the spoils. Most of La Buse's considerable fortune, says Frank Sherry, author of *Raiders and Rebels: The Golden Age of Piracy*, came from his capture of the *Cabo*. French authorities caught up with La Buse a few years later near Réunion, a rugged volcanic island south of Mauritius. In 1730, as he was about to face the gallows there, the pirate is said to have tossed a sheaf of papers into the crowd, taunting his audience with these final words: "My treasure to he who can understand."

WHEN I ARRIVE on Mahé, it's easy to spot Graf in the crowd at the airport. He's the only guy wearing a T-shirt emblazoned with the classic pirate ensign—a skull and crossbones. Tanned and fit, the treasure hunter seems relaxed—hardly what you'd expect from someone who has spent a third of his life obsessed with a long-dead pirate. Yet Graf is no laid-back islander. He's in-your-face intense right from the start. I'd barely heaved my suitcase into the trunk of his rusty compact car when he launched into a breathless retelling of how he'd voyaged some 10,000 miles from his Colorado home, married a Seychellois hotel reservations manager and spent more than $450,000 of his own money looking

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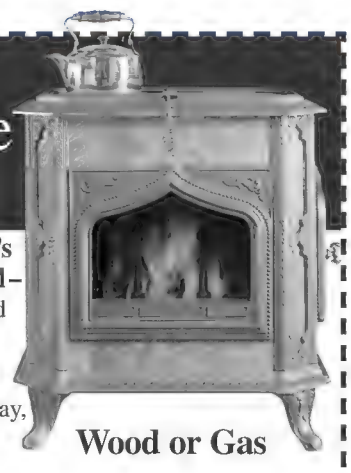

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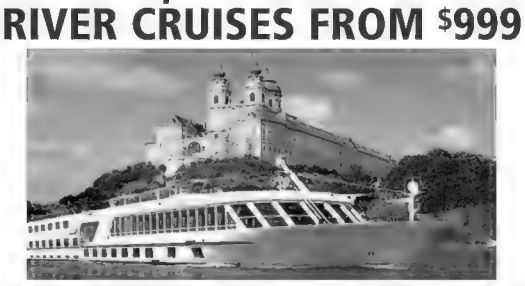

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There was a cryptogram and four letters, each thought to offer different clues to the treasure.

ASHLEY KISSINGER

Man-made markings on boulders (right, foreground) along a beach on Mahé led Graf to the spot where he's digging.

for a treasure that others have failed to find here for nearly a century.

"In 1923 a rare storm came through the Seychelles," Graf says as we wind through the streets of the capital, Victoria. "It eroded many of the beaches." One particular beach was in Mahé near the home of Rose Savy, a local landowner. Thrashing wind and waves had exposed boulders on her property with mysterious markings. According to one version of the story, Savy wrote her nephew, who worked at the national archives in Réunion, with news of the discovery. He thought the markings might be related to a set of 200-year-old papers kept in the archives—the papers, it's believed, that La Buse had flung at the crowd before his execution. The nephew sent the papers to Savy. There was a cryptogram and four letters, each thought to offer different clues to the treasure.

Graf, who moved to Mahé in 1984 to manage a satellite-tracking station for a U.S. defense contractor, first learned about La Buse from a magazine article. By then copies of the La Buse papers were in the hands of another

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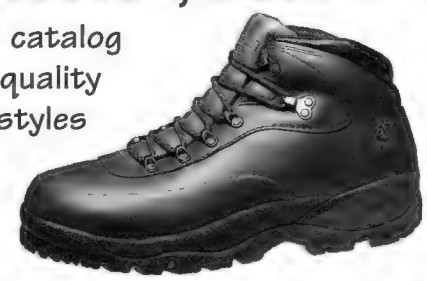

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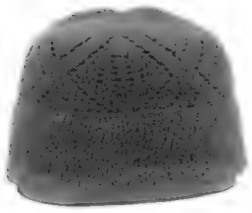

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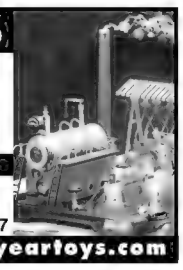

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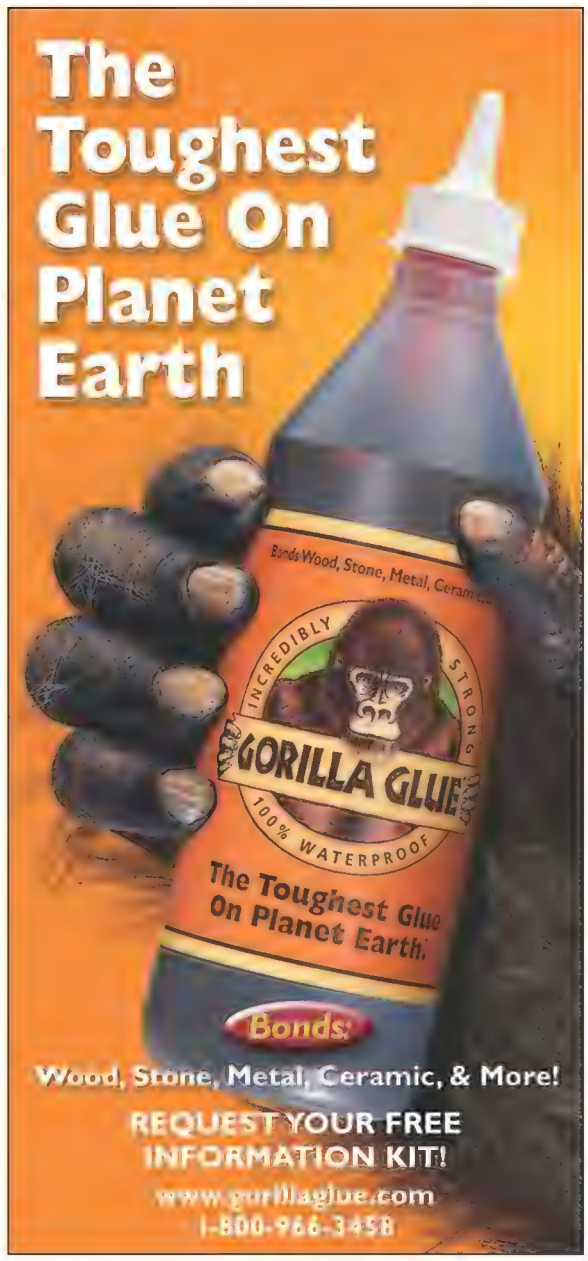
treasure hunter, John Cruise-Wilkins, who was resuming work started by his father, Reginald, a British soldier who'd acquired the papers in 1949 from Rose Savy and squandered 27 years looking for the treasure.

Graf agreed to help fund Cruise-Wilkins' project, and the two toiled together in the rocks for four years before Graf broke with his partner over where to search. "Cruise-Wilkins gave me copies of the papers," recalls Graf, "and told me to figure it out for myself." Graf then negotiated an exclusive agreement with the Seychelles government to dig on his own, which he did until 1998, when a license to continue was given to Cruise-Wilkins for two years. In April 2003, Graf once again obtained permission to dig.

Graf says he narrowed his search by trying to reconcile the La Buse papers with the markings on the rocks, which led him to the spot where he constructed his lagoon. "I tried to get into the mind-set of the pirates," he says. "I had this dream, and every single morning for two or three weeks I'd wake up wondering 'What does this single dot on the rocks mean?'" There were dozens of similarly puzzling clues. La Buse had advised readers to be "fixed by the ecliptic plan," and also wrote: "Let Jason be your guide and the third circle will be open to you."

Kevin Rushby, author of *Hunting Pirate Heaven: In Search of the Lost Pirate Utopias of the Indian Ocean*, told me that the Seychelles aren't the only place people are seeking La Buse's stash. "Treasure hunters have been scouring Réunion for the treasure for years," he says. "They even sacrifice chickens on his grave there."

Graf isn't daunted. At his excavation site on Mahé, we scramble over weathered boulders that jut from the beach like giant stone fingers. He points out at least two dozen carvings and symbols etched into the rocks. Each of these markings, Graf takes pains to explain, is related to a comment in La Buse's writings. Later, for four hours back at my hotel, he shows me PowerPoint slides on his laptop, including aerial photo-



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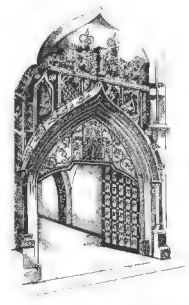

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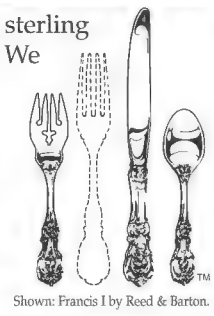

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"The treasure has been sitting there for 300 years," says Graf, "and I've only got a couple of feet to go."

ASHLEY KISSINGER

Referred to in La Buse's letters as "the source," the hole above, says Graf, offers a critical clue to the treasure's location.

graphs of the excavation site. One picture, he says, reveals a sequence of seemingly random holes that mirrors a constellation of stars referred to in one of the letters. That's not the only evidence he might be on the right track. Years ago, Reginald Cruise-Wilkins had found a domino with handmade inlays showing a six and a two not far from the place where Graf is now digging. La Buse's papers, it turns out, contain a reference to the number 62.

Today it's thought that La Buse's share of the *Cabo* heist could be worth $200 million, but Graf says that figure varies depending on who you talk to. He's heard sums as high as $500 million. "But even if it's only $5 million," he says, "that's still a lot of money." Though under Seychelles law, he tells me, half of any earnings must go to the

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government. Yet time is running out. Graf's excavation permit is due to expire in April 2005, and Cruise-Wilkins is standing by, ready for a third assault. "I know what we have to do, and it will be pretty fast," says Cruise-Wilkins, whose home is just down the road from the excavation site. "I was working on a tight budget, but now I have the funding. Graf was supposed to move out and I was supposed to take over on October 1, but the government's technical adviser visited the site and gave him six more months." Cruise-Wilkins says that his former partner, now rival, is merely stalling and will run out of time before finding the treasure.

As Graf and I stood at the edge of his lagoon after a dive, he insisted that he was closer than ever to a narrow channel that he says will lead him to the vault that La Buse alludes to in his papers. It'll require just ten days of dredging to reach the vault's entrance, he claims. And what if it takes longer?

When I telephone Graf a few weeks after returning to the States, he tells me that the ceiling of the so-called channel has begun to collapse. He'll have to dig out part of the ceiling to prevent a cave-in—a setback that will cost him at least a couple of more months. In the meantime, he'll have to persuade his wife to hold out a bit longer. "She's sick of it," he says. "She wants to go to the States so I can take a 9-to-5 job. But I won't do it. I've got five different letters that point to the same spot. The treasure has been sitting there for 300 years, and I've only got a couple of feet to go."

Later, getting ready to leave the island, I tell Graf that his story is a bit hard to believe. Then again, by now I've learned that to be a treasure hunter—to slog away for years in the heat, grit and grime—takes a certain amount of blind optimism. As he starts to drive off, Graf pokes his head out the car window and shouts: "You'll believe me when the treasure comes out of the ground!" Optimism perhaps—or maybe just pirate fever.

MICHAEL BEHAR is a freelance writer based in Washington, D.C.

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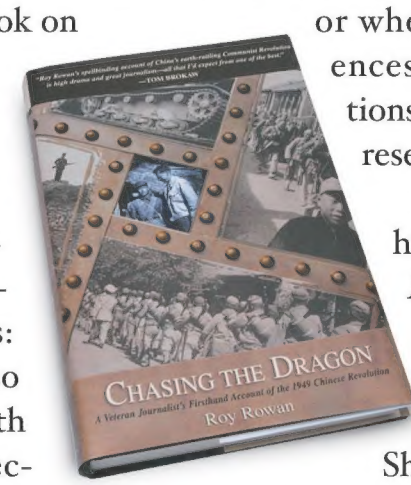
CHASING THE DRAGON: A VETERAN JOURNALIST'S FIRSTHAND ACCOUNT OF THE 1949 CHINESE REVOLUTION

ROY ROWAN
THE LYONS PRESS, $23.95

REVIEWED BY IAN JOHNSON

TIMES WERE when every foreign correspondent returning from China would write a book, especially right after China and the United States normalized relations in 1979. A reporter's year or two in China, it seemed, would be followed by a quickie book on the Middle Kingdom.

Not so for Roy Rowan. The former *Life* magazine correspondent waited nearly 60 years to publish his account of China's 1949 revolution, and all one can say is: Why the heck did he wait so long? The book is packed with great stories and vivid anecdotes, even though at times he seems to rely too heavily on musty diaries and magazine archives rather than fresh memories.



The book is centered around two crucial years, from 1947 when *Life* hired Rowan to be its man in China to the Communists' victory over the Nationalists in 1949, marking the end of the 15-year civil war. First, however, Rowan provides a quick sketch of growing up in New York City and his infatuation with newspapers—in high school, he wrote and printed his own neighborhood paper.

He served in the Pacific in the Army, preparing for the invasion of Japan that dropping the atom bombs on Hiroshima and Nagasaki obviated. Back home a year later, he didn't know what to do with himself; in hopes of returning to Asia, Rowan signed up with the U.N. Relief and Rehabilitation Administration, which sent him to the country that most fascinated him: China.

Rowan's account of this interlude gives a unique perspective on China's civil war. Assigned responsibility for shipping relief supplies into China's interior, Rowan accompanied trains and truck convoys to cities in central China. He senses the corruption in the Nationalist administration and realizes that the Communists under Mao Zedong are better organized and command more popular support. The chapters about this period would have benefited from more context: one isn't sure where the main action is occurring or whether Rowan's experiences are random observations or are meant to be representative of larger events.

Then, in 1947, he gets his break: sight unseen, *Life* hired him based simply on a report he had freelanced for the Time-Life bureau in Shanghai about the fighting he had witnessed in Henan Province. Rowan's subsequent trip to New York, where he meets Time/Life boss Henry Luce, is a reminder of how much more spontaneous journalism was then—and in many respects, how much better media outlets were for their willingness to hire people like Rowan, talented and eager but lacking formal qualifications.

From here on, Rowan is in his element. Perhaps because he has his notes and articles to refresh his memory, the author hits his stride. Rowan's description of the fall of Mukden (modern-day Shenyang), the northeastern city encircled by the Communists and surviving only by airlifts, is chilling. Equally absorbing—especially today in an age of satellite phones—is Rowan's account of the logistical feat necessary to courier his photographer's negatives back across the Pacific to New York, thereby handing Luce a scoop about the Nationalists' military disaster.

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(Signed) David R. Kefford, General Manager

ROY ROWAN

Author Rowan (with a Communist sentry in Xihua, 1947) predicted "Mao's armies are indeed going to nail the Nationalists."

Riveting, too, is Rowan's description of the fall of Taiyuan, where 400 of Marshal Yan Xishan's commanders made good on a promise to swallow cyanide capsules rather than surrender to the Communists. (The wily warlord, however, managed to evade this dramatic denouement, instead dying at a ripe old age a dozen years later in Taiwan.) At the Battle of Xuzhou, the Nationalists put up their stiffest resistance, a reminder to modern readers that although historians often depict the Communists' victory as inevitable, the Nationalists were not as inept as sometimes portrayed. The Nationalists' defeat at Xuzhou determined the fate of China.

Rowan's highly readable account contributes substantially to our understanding of China. *Chasing the Dragon* takes its place alongside other classic pieces of reportage on this crucial turning point in Chinese history.

Reviewer IAN JOHNSON, *the* Wall Street Journal's *Berlin bureau chief, won a 2001 Pulitzer Prize for his coverage of China. He is the author of* Wild Grass: Three Stories of Change in Modern China.

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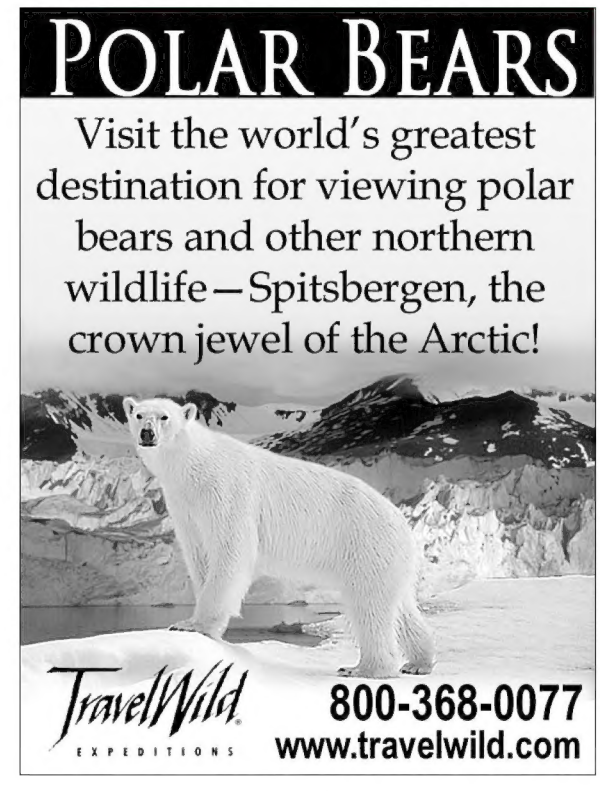
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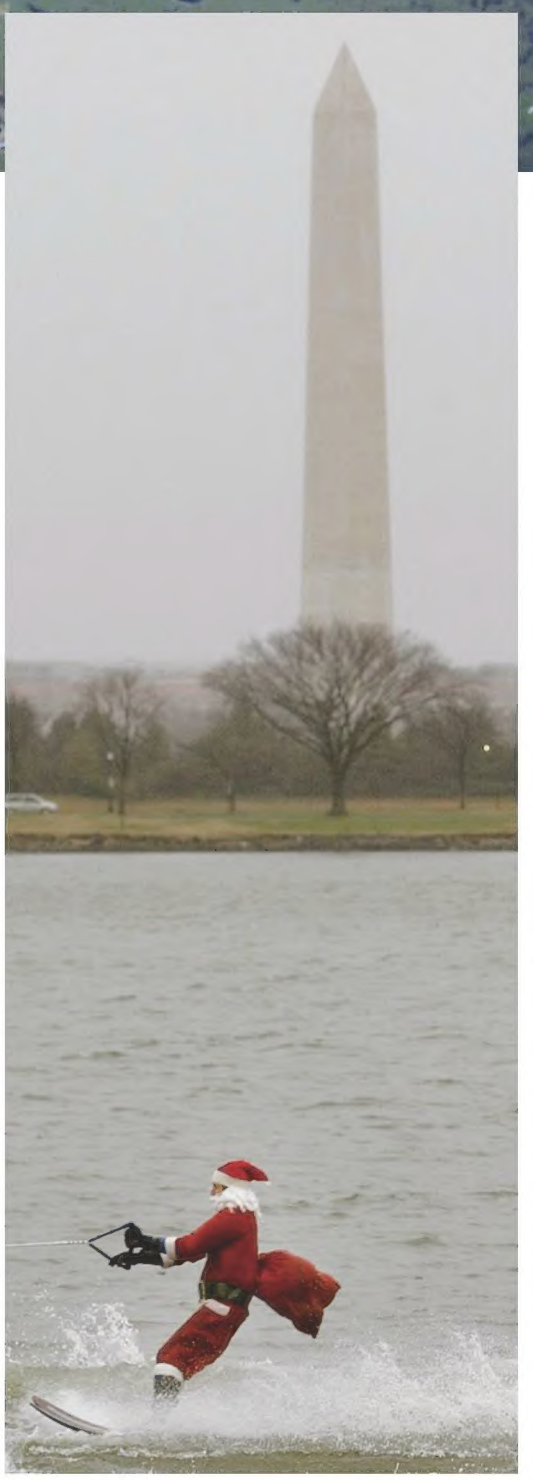

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